# ORGANIZATIONAL INVOLVEMENT IN CARBON MITIGATION:

# THE NEW ZEALAND PUBLIC SECTOR

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A thesis submitted for the degree of

Doctor of Philosophy

Accounting and Information Systems,
University of Canterbury,
Christchurch, New Zealand

April 2013

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The New Zealand Public Sector

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## ACKNOWLEDGEMENTS

The research presented here is part of a Royal Society of New Zealand Marsden-funded research programme which explores Carbon Neutrality: Fact or Fiction. I would like to thank the New Zealand Royal Society for recognizing the value of this topic and creating the opportunity to explore its dynamics here in New Zealand.

While a PhD thesis is the end result of an individual's dedication and effort, it does not occur in isolation, nor is it possible to complete without the continued support of colleagues and friends. I would therefore like to foremost thank the Marsden research team here at the University of Canterbury, my two supervisors, Profs. Amanda Ball and Markus Milne, programme Senior Fellow Ian Mason, and fellow PhD candidate Maya Murphy, for their continued support throughout this experience, with particular thanks to Markus for his thorough review of my draft chapters.

I would also like to thank the Department of Accounting and Information Systems and the University of Canterbury in general. With their administrative assistance and understanding, navigating the challenges presented by the earthquakes throughout the last few years was made easier.

And most importantly, I would like to thank my partner Emily. It has been through her dedicated support and continued encouragement (and preparation of many meals!) that I have been able to complete this journey in one piece! Thank you from the bottom of my heart.

Thank you all,

S Jeff Birchall
April 2013

## ABSTRACT

**Introduction**

New Zealand (NZ) ratified the Kyoto Protocol in 2002, committing to prudent greenhouse gas (GHG) emission reductions. In an effort to promote public sector carbon management, in 2004, Clark's Labour-led Government funded local government membership in ICLEI's Communities for Climate Protection - NZ (CCP-NZ) programme. In 2007, the same Government, in tandem with efforts to price carbon and develop an Emissions Trading Scheme, through the Carbon Neutral Public Service (CNPS) programme, sought to move the core public sector towards carbon neutrality (Clark, 2007c). In 2008, the NZ government changed from a Labour-led to a National-led Government, and this resulted in a shift in its carbon emission mitigation strategy, including the termination of the CNPS and the CCP-NZ programmes.

**Purpose**

The research has two central objectives: First, to determine why NZ's newly elected National -led Government cancelled the CNPS and the CCP-NZ programmes; and, second, to determine whether despite the discontinuation of these two programmes and in the absence of Government support, will NZ government organizations continue to strive for carbon emission reductions and neutrality.

**Approach**

This empirical research is investigative and probing, and comprises a series of semi-structured interviews with senior managers responsible for the delivery of the CNPS and the CCP-NZ programmes within their respective organization. The architects of each programme (e.g. the NZ Prime Minister and CEO of ICLEI/ Director of ICLEI Oceania) are also investigated in order to glean insight into the rationale for the ultimate termination of these two programmes. Fieldwork is informed by publicly available information that provides insight into Government's rationale for creating and discontinuing the CNPS and the CCP-NZ programmes.

Narrative analysis and termination theory serve as the primary methodological tools for this study, providing insight into meaning, interpretation and individual experience as it relates to the dismantling of the CNPS and the CCP-NZ programmes.

**Findings**

This study finds that though economic constraints and programmatic inefficiencies may have played a contributing role, political ideology is the primary rationale for the termination of the CNPS and the CCP-NZ programmes.

With the ideological shift towards strong neoliberal market environmentalism, Government support for initiatives like the CNPS and the CCP-NZ programmes has declined markedly, with the desire to demonstrate leadership in this area in complete retreat. Ultimately, notwithstanding the desire of some government organizations to continue with programme objectives, albeit with less priority, NZ public sector organisational resolve towards these goals has weakened.

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Birchall, SJ., Ball, A., Mason, I., and M. Milne. 2012. Managing Carbon in Times of Political Change: The Rise and Fall of the New Zealand Carbon Neutral Public Service Programme. *Australasian Journal of Environmental Management:* DOI:10.1080/14486563.2012.720455.

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MARKUS MILNE

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# CHAPTER 1 - INTRODUCTION

## 1.1. INTRODUCTION

### 1.1.1. Introduction to the Thesis

Climate change is one of the most important and difficult challenges facing modern society. Given that warming is attributed to, in large part, anthropogenic greenhouse gas (GHG) emission increases (IPCC, 2007c), communities from around the globe are mobilising to reduce their atmospheric GHG contribution, some with the goal of achieving carbon neutrality.

New Zealand (NZ) ratified the Kyoto Protocol in 2002, committing to prudent GHG emission reductions. In an effort to promote public sector carbon management, in 2004, Clark's Labour-led Government funded local government membership in ICLEI's Communities for Climate Protection - NZ (CCP-NZ) programme. In 2007 the same Government, in tandem with efforts to price carbon and develop an Emissions Trading Scheme, through the Carbon Neutral Public Service (CNPS) programme, sought to move the core public sector towards carbon neutrality (Clark, 2007c). While the core public sector accounts for only 2% of NZ's total GHG emissions (NZ Govt., 2007b),[1] the aim of the CNPS and the CCP-NZ programmes was to elevate NZ's international profile as a leader on sustainability in general and climate change and carbon neutrality in particular. In late 2008 the NZ government shifted from a Labour-led to a National-led Government, and this resulted in a change to its carbon agenda, including the abandonment of the CNPS and the CCP-NZ programmes.

NZ Government response to climate change in general remains controversial and highly politicised. As part of a Royal Society of New Zealand Marsden-funded research programme into *Carbon Neutrality: Fact or Fiction*, this empirical study examines the processes of conception, outworking and termination of the CNPS and the CCP-NZ programmes in order to discover the beliefs, values, commitments and narratives at play in government organizations which were keen (and to varying degrees mandated) to act on climate change and carbon mitigation.

[1] For clarity, the core public sector/service refers to the 34 departments (government agencies) that were mandated to participate in the CNPS programme, but does not include the broader state sector (e.g. Crown entities, schools, district health boards) (NZ Govt., 2007b). This is discussed further in Chapter 3.

### 1.1.2. Chapter Purpose and Outline

The purpose of the Introduction chapter is to provide an account of the motivations for research and a concise depiction of the study's research objectives. Moreover, by discussing the study's importance and presenting its contribution to scholarly debate, in addition to qualifying the study's limitations and key assumptions, this chapter provides grounding for the subsequent chapters.

This chapter is divided into seven sections, (1.1) Introduction; (1.2) Motivations for PhD Research; (1.3) Research Objectives; (4) Importance of the Study; (1.5) Contributions to Knowledge; (1.6) Limitations and Key Assumptions; and, (1.7) Thesis Outline. Building off the first section, which provides an introduction to the thesis itself, section 1.2 discusses the motivations for PhD study in general. Section 1.3 presents the research objectives and explains the context within which they will be explored. Sections 1.4 and 1.5 highlight the practical and empirical importance of the study, while section 1.6 explains the study's limiting factors and key assumptions. And, section 1.7 concludes the chapter by providing a structural outline of the entire thesis.

## 1.2. MOTIVATIONS FOR PhD RESEARCH

My research philosophy is driven by a keen sense of curiosity and a desire to continuously learn, with specific reference to the social-economic-environmental nexus and the solutions to solving the complex problems that exist within this space. The research programme *Carbon Neutrality - Fact or Fiction?* led by Professors Markus Milne and Amanda Ball, Department of Accounting and Information Systems, University of Canterbury, provided me with an opportunity to expand my studies and explore a field that is growing in global importance.

While my previous research experience addressed climate science and policy, as well as organizational strategies for climate mitigation, it nevertheless lacked an in-depth consideration for organizational decision dynamics: how do organizations come to understand climate change - what are their cognitions? How do organizations decide how best to act on climate mitigation - how do they decide their commitments and actions? As a result, in addition to being an interesting line of inquiry, *Carbon Neutrality - Fact or Fiction?*

also serves a pragmatic function. Participation in this research programme would ultimately allow me to become a better researcher and a more well-rounded academic.

Why this research programme specifically? Simply stated, as the literature has shown, while organizations are beginning to engage in climate mitigation activities, little scholarly work has attempted to flesh-out the motives that drive or resist action (Okereke, 2007). Additionally, insight gleaned from the work that does explore this dynamic (e.g. Okereke, 2007; Kolk & Pinkse, 2004) tends to focus on analysis of websites, reports and questionnaires, rather than the narratives at play within organizations.

*Carbon Neutrality - Fact or Fiction?* thus provided me with an opportunity to contribute to the scholarly debate on climate change mitigation in general, and importantly, contribute to the vastly under-researched literature on public sector organizational carbon management and carbon neutrality. Moreover, by approaching this study through in-depth longitudinal case studies, employing termination theory as the theoretical lens, and using narrative analysis to extract the experiences of those involved in the carbon management (and neutral) strategies, this study provides an inside view of the state of public sector organizational buy-in for carbon mitigation in NZ under a National-led Government.

### 1.3. RESEARCH OBJECTIVES

In November 2008, NZ underwent a shift in leadership, from a Labour-led to a National-led Government. Following, two key programmes supported by Labour and intended to lead NZ government organizations towards carbon emission reductions and carbon neutrality were discontinued. This study thus has two primary research objectives:

> First, to determine why NZ's newly elected National-led Government cancelled the Carbon Neutral Public Service programme and halted funding and therefore ended the Communities for Climate Protection programme;
>
> And second, to determine whether despite the discontinuation of these two programmes, NZ government organizations will continue to strive for carbon emission reductions and carbon neutrality.

These research objectives are explored through four stages of programme evolution:[2]

Inception: Why were the CNPS and the CCP-NZ programmes created?
- Why did the organizations join the respective programmes?
- How did the organizations make sense of the climate change discourse?
- What were the organizations' drivers and motivations for action on carbon mitigation?
- What were the organizations' expectations and goals?

Application: How effective were the CNPS and the CCP-NZ programmes?
- How did expectations and goals compare to the actual experience?
- How economic, efficient and effective (operationally) were the respective programmes at achieving the intended goals?

Termination: Why were the CNPS and the CCP-NZ programmes terminated?
- How were programme economics, efficiency and effectiveness evaluated?
- Does government no longer believe in the need to manage carbon?
- Did termination meet resistance from programme supporters?

Next Steps: Will future iterations of the CNPS and the CCP-NZ programmes be created?
- What will the organizations do next - has the ethos of these programmes become business as usual?
- Will the organizations continue with or without the assistance and leadership of Government?

According to termination theory, programme termination typically has three rationales: economic constraints, programmatic inefficiencies and/ or political ideology (deLeon, 1982a). This research explores whether NZ Government's cancelling of the CNPS and the CCP-NZ programmes aligns with deLeon's rationales for programme termination. And, if so, which one, or combination?

In order to resolve the latter and inform the former research objective, NZ government organizations are explored to determine their cognitions, commitments and actions towards carbon emission reductions and achieving carbon neutrality. Cognitions, commitments and actions were chosen as the focal points of this research because they intrinsically represent an

[2] These themes are the foundation for the semi-structured interview questions, and reflect the study's theoretical framework, termination theory, discussed in Chapter 4.

organization's direction, or path, towards carbon emission reductions and achieving carbon neutrality – cognitions tend to lead to commitments, which often result in actions.

## 1.4. IMPORTANCE OF THE STUDY

Climate change presents society with an unprecedented challenge as in order to stabilise atmospheric GHG concentrations and avert run away climate change, most of the developed world will have to cut emissions by 80-90% by 2050 (IPCC, 2007d; Stern, 2008b). Indeed, given the seriousness of climate change, communities from around the globe are mobilising to reduce their atmospheric GHG contribution, some with the goal of achieving carbon neutrality.

As a result of the urgency, both political and environmental, associated with the climate change problem, it is critical to investigate how NZ government organizations are making sense of the climate change discourse, and to flesh-out the drivers and motivations for and ultimate actions on achieving carbon reductions and in some case carbon neutrality. Whether the discontinuation of the CNPS and the CCP-NZ programmes affects the respective organizations' resolve for achieving carbon emission reductions and carbon neutrality is also informative. This study therefore provides Government with insight into the degree to which it can expect public sector organizations to engage climate and carbon mitigation efforts without Government support.

An understanding of the above issues can in turn provide Government policy makers with insight into how best to weave climate and carbon management policies with other national strategic policies such as agriculture and energy, two sectors which were responsible for 46% and 44%, respectively, of domestic greenhouse gas emissions in 2009 (NZ Govt., 2011c).

Additionally, because of the wicked nature of the climate change problem,[3] and the complexity of policy solutions (e.g. Verweij et al., 2006), it is important to understand Government's rationale for terminating two programmes designed specifically to help NZ government organizations mitigate against climate change. This in turn provides insight into

[3] See Rittel & Webber (1973) for an early discussion on the concept of wicked problems.

how NZ's National-led Government intends to meet its international obligations under the Kyoto Protocol and manage its domestic carbon footprint in general.

Finally, NZ's Government is not alone in its need to balance the economy, society, politics and the environment. And while NZ's contribution to global GHG emissions is low, at about 0.2%, and though the core public sector accounts for only 2% of NZ's total GHG emissions (NZ Govt., 2007b), NZ has the 11$^{th}$ highest emissions per capita, and is among the developed countries with the highest increase in emissions from 1990 levels (NZ Govt., 2009c). Insight gained from this study could therefore have significant implications for global public sector involvement in climate change and carbon abatement.

## 1.5. CONTRIBUTIONS TO KNOWLEDGE

There is a dearth of academic study examining how government organizations come to understand the climate change discourse. And, as identified by Ball et al. (2009b), Brody et al. (2010) and Milne & Grubnic (2011), there is also limited academic discussion concerning why and how government organizations contribute to climate change mitigation, and the efficacy surrounding their actions to achieve carbon neutrality (e.g. Ball & Grubnic, 2007; Ball et al. 2009b).

Governments from around the world (e.g. UK, Germany, Norway, New Zealand) have recently instituted public sector carbon management initiatives designed to lead by example in this area (NZ Government 2007b). This research goes beyond existing academic research to provide a critical analysis of how the NZ Government perceives, rationalizes and acts on climate change and carbon mitigation. Moreover, while there is a growing body of literature that explores NZ's place in global climate policy (e.g. Chapman, 2006; Chapman & Boston, 2007), there remains a significant lack of empirical work focusing on how NZ public sector organizations address climate change. This study, through case-based narratives, therefore contributes to the understanding of how NZ government organizations makes sense of the climate change discourse, and documents their cognitions, commitments and actions towards achieving carbon emission reductions and carbon neutrality. And further, in exploring the role of political interference, this research sheds light on the resolve of NZ government organizations' towards carbon mitigation.

This research also contributes to political theory literature by applying deLeon's rationales for programme termination to the contemporary topic of climate change, specifically to two of NZ's key carbon mitigation programmes: the CNPS and the CCP-NZ programmes. This will provide insight into the robustness of deLeon's rationales for programme termination, and also an appreciation for the inertia, vested interests and legitimacy of the respective programmes through time.

## 1.6. LIMITATIONS AND KEY ASSUMPTIONS

As with any research, an appreciation of the study's limitations and key assumptions is critical to understanding its design, execution and interpretation. Thus the purpose of this section is to qualify the thesis. More precisely, here, limitations and key Assumptions are briefly discussed to scope the boundaries of the study and provide insight into the mindset of the researcher.[4]

Because of the objectives of the research, scope is limited to NZ, specifically to public sector organizations involved in the CNPS and the CCP-NZ programmes, respectively. In addition, analysis of data collected via interviews and organizational reports will be limited to the context of carbon mitigation and climate change, and where relevant sustainability more broadly.

Since participation in the CNPS programme was mandated by Government, it can be assumed that the 34 core government agencies that took part in the programme may not actually have supported the ethos or value of the initiative. However, given the high profile of the programme, it can be assumed that at the least the six lead-core agencies did appreciate the need to deliver on the programme's mandate. Also, as a result of the programme's quick design and implementation, it can be assumed that the core agencies did not posses the in-house expertise necessary to fulfil programme's brief. Additionally, it is assumed that the lead-core agencies involved in the CNPS initiative are a good representative cross-section of core government agencies (NZ Govt., 2007b).

[4] Limitations can also refer to the barriers or elements that limited the scope of the study - things that got in the way.

Councils involved in the CCP-NZ programme, while supported by Government, were not mandated to join the initiative. Therefore, it is assumed that because they chose to participate in the programme, they appreciate the ethos and value of the programme, be it from an environmental, political, social or economic perspective. It is further assumed that councils participating in the CCP-NZ programme are among the more proactive NZ councils with respect to carbon management and climate control. It is also assumed that the study selection representing the CCP-NZ programme member councils is representative of the total programme membership. It is also assumed that the total programme membership, though more proactive on climate mitigation than the non-programme member councils, is also representative of NZ councils in general.

While some organizations were seeking only to reduce their GHG emissions, it is assumed that organizations aiming for carbon neutrality were not striving for carbon zero (given available technology, achieving carbon zero is impractical at this time). Additionally, it is assumed that carbon offsetting was a component of achieving carbon neutrality.

Organizations that consider themselves leaders may be more inclined to participate in research studies. Given that the research participants chose to partake in this study voluntarily, be it via interviews or by providing access to organizational reports, it is therefore assumed that there is a risk of self-selection bias. It is also assumed that the act of being studied in and of itself may influence how the organizations participate. What's more, by targeting top-level management for organizational data, it is assumed that this study limits feedback and perspective to top-level discourse.[5]

And importantly, while every effort has been made to remain neutral and ensure a reflexive approach, it is assumed that the researcher's history, beliefs and interests have influenced the study to some extent.

[5] Though noted later in the thesis, it should also be noted here that while efforts to meet with Dr. Nick Smith (Minister for the Environment and Climate Change Issues) were unsuccessful, it can be assumed that the nature or narrative of the interview would likely have mirrored the content of National's media releases vis-a-vis the termination of the CNPS and the CCP-NZ programmes. In other words, it can be assumed that the interview would have been censored to reflect party ideology.

## 1.7. THESIS OUTLINE

In addition to the Abstract, Acknowledgements, List of Tables, Figures and Articles, the thesis is divided into nine chapters, (1) Introduction; (2) Literature Review; (3) Context and Background; (4) Theoretical Framework; (5) Methods; (6) Findings I; (7) Findings II; (8) Discussion; and, (9) Conclusion. Following the final chapter, References and Appendices are included. Structurally, each chapter begins with an introduction and ends with a summary that locates the chapter within the research study. The volume between these two sections depends on the nature of the chapter itself, with some chapters being significantly larger than others. To assist with progression, each chapter builds off the previous chapters and includes footnotes at the end of each page.

Chapter 1 begins with a discussion of my motivations for PhD studies, then presents the research objectives, highlights the importance of the research, notes the study's limitations and key assumptions, and provides a structural outline of the thesis. Chapter 2 provides a grounding in the prior research relevant to the thesis focus. Namely, the chapter presents the climate change debate, the basic science of climate change and discusses climate policy, specifically as it relates to international, national, local and organizational policy for climate mitigation. Chapter 3 discusses the NZ policy context within which the study takes place, and provides a detailed overview of the CNPS and the CCP-NZ programmes. In addition, this chapter highlights the emission profile, projections and reduction goals of NZ and the organizations that were involved in the CNPS and the CCP-NZ programmes.

Chapters 4 and 5 discuss the study's approach. Specifically, Chapter 4 presents the theoretical lens through which the study is explored, highlighting deLeon's rationales for programme termination. Chapter 5 presents the study's methods, including a discussion on qualitative methodology and reflexivity, ethics, and research execution and interpretation.

Chapters 6 and 7 describe the research findings. More accurately, Chapter 6 breaks-down the various themes discovered from the interviews with the senior managers from the case studies, and Chapter 7 interprets the themes through the study's theoretical framework. Further to the themes emerging from the case studies, Chapter 6 also presents the findings resulting from word count analysis of council reports.

Chapter 8 provides the analytical finish to the study. Drawing on all the data amassed through the research, this chapter discusses the evolution of the CNPS and the CCP-NZ programmes in order to glean insight into the National-led Government's rationale for programme termination, and to understand public sector organizational resolve towards carbon mitigation. Following, Chapter 9 concludes the thesis by addressing the research findings in the context of the study's two research objectives, highlights the theoretical and practical implications of the study's findings, including contributions to knowledge, and ends with a brief discussion on future research directions.

# CHAPTER 2 - LITERATURE REVIEW

## 2.1. INTRODUCTION

### 2.1.1. The Debate

Climate change is one of the most important and complex challenges facing society today. With the release of the International Panel on Climate Change's (IPCC) Fourth Assessment Report (2007), in combination with such landmark publications as Flannery's The Weather Makers (2005),[6] Stern's The Economics of Climate Change (2006) and Gore's An Inconvenient Truth (2006),[7] the notion of climate change has leapt to the forefront of popular and public policy discussion - deservedly garnering the public's attention (Sonnenfeld, 2008). Building on these key texts, a variety of publications aimed at the general public continue to advocate for (e.g. McKibben's [2010] Ea*a*rth: Making a Life on a Tough New Planet)[8] or against (e.g. Wishart's [2009] Air Con: The Seriously Inconvenient Truth About Global Warming) action to mitigate or adapt to climate change, indicating continued interest in understanding the science and challenges of anthropogenic climate change. And this interest is echoed in the academic community as well,[9] where study into the dynamics and the influence of – and solution to - anthropogenic climate change is strong.

As Pielke et al. (2009) suggest, the human species has an immense capacity to influence Earth's climate system. And, according to Hansen (2005), via the rapid production of GHG emissions, the human species has altered the energy balance of the planet.[10] Further to this point, as Lomborg (2007, p. xi) indicates, "that humanity has caused a substantial rise in atmospheric carbon dioxide (CO2) levels over the past centuries, thereby contributing to global warming, is beyond debate." Such assertions leave some in the scientific community to conclude "the world's prolonged streak of exceptionally good climate has probably come to an end" (Weart, 2008, p. 87).

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[6] Diamond's Collapse (2005), though perhaps to a lesser extent, may have also been influential.

[7] These texts brought the notion of climate change to the forefront of popular and public policy discussion, much the way Rachel Carson's Silent Spring launched the environmental movement in 1962, and the Brundtland Report, in 1987, launched the idea of sustainable development (climate change, in the context of global energy, featured in a chapter of the Report).

[8] See also for example, Lovelock (2009); Hansen (2009); Hamilton (2010); Lomborg (2007, 2010); and, Pielke (2010).

[9] Strong interest in climate change is also echoed in the grey literature, with several research institutes from round the globe dedicating effort to climate change affects and mitigative action. See for example: in the UK the Tyndall Centre, the Climate Research Unit, the Global Climate Network; in Japan the Asia Pacific Network; in Canada the Pembina Institute; and, in the US the PEW Centre, the World Resource Institute.

[10] In 1988, Hansen stated to a NASA Congressional Committee that it was 99% certain, anthropogenic forcing of CO2 was responsible for the warming tend (Shabecoff, 1988).

Because of increasing temperatures, key elements of Earth's climate system, such as Antarctica and Greenland's glaciers and the Arctic's sea ice, may in fact reach their tipping point (or critical threshold) this century, resulting in a situation where by small perturbations can cause disproportionately large reactions (e.g. Lenton, 2008). And worryingly, according to Rahmstorf et al. (2007), new data suggest sea level may be responding more quickly than models indicate. Moreover, Kriegler et al. (2009, p. 5) caution that though scientific knowledge concerning tipping points remain poor, and though uncertainty exits with regard to the prospect of triggering major climate shifts, this "does not necessarily imply that such events are considered to be remote."

While the debate continues, strong academic attention has focused on the problem of discerning the difference between natural and anthropogenic influences on surface temperature (e.g. Lean & Rind, 2008). Of the natural forcings evaluated, solar forcing has received the greatest attention, and after much study, has been shown to have little influence on modern warming (e.g. Solanki et al. 2004; Ammann et al., 2007; Lockwood & Frohlich, 2007; Lockwood, 2008). In support of this finding, Lockwood (2008) concludes that 75% of warming since 1987 can in fact be attributed to anthropogenic factors.

Gerhard (2004), on the other hand, indicates that arguments supporting human-induced climate change fail to appreciate the magnitude of natural elements that drive and maintain Earth's climate. What's more, according to Gerhard (2006), there is little evidence to suggest that the 'imperceptible' rise in temperature (as measured in the lower stratosphere) is correlated with the steady rise in atmospheric CO2 concentration. Sorokhtin et al. (2007) add that contemporary theories of anthropogenic forcing of climate change tend to ignore the paleoclimate record, and rely on computer models that overtly assume GHG emissions are the primary drivers of climate change.[11]

Interestingly, there is yet another debate concerning whether global measurements of warming are more to do with the urban heat island (UHI) effect (e.g. Arnfield, 2003; Imhoff

[11] Computer simulation is a key component to climate prediction. Model interpretation, however, is challenging, and the associated uncertainty must be considered appropriately (e.g. Parker, 2010).

et al., 2010),[12] a phenomenon first recognized in 1810 (Pearce, 2010a). In this vein, it is suggested that instrument proximity to urban centers has influenced data trends, as is evident in Jones et al. (2008),[13] where it is shown that in eastern China, between 1951-2004, UHI was responsible for 40% of the warming.[14] Yet, as Pearce (2010a, p. 64) notes, "most climate researchers have felt safe in ignoring the potential of urban heat islands to confound their temperature trends."

Ultimately, as Held et al. (2011, p. 4) note, despite climate science being an unpredictable science by nature, "the general public is not used to uncertainty amongst scientists." And as a result, the authority of climate science has been called into question. As Jasanoff (2010) indicates, scientific progress is dependent on transparency and trust. For climate science these tenets were shaken following the 'climategate' scandal at the Climate Research Unit (CRU), University of East Anglia, UK, where 4660 files including emails, documents, raw data and code from 1996-2009 were hacked and leaked from the CRU to the public (e.g. Adam, 2010a; Webster, 2009; Pearce, 2010a).[15] Though the CRU was cleared of any misconduct (e.g. Gillis, 2010; McCarthy, 2010; Adam, 2010b), the media coverage fueled the resolve of climate skeptics (e.g. Johnson, 2009; Heffernan, 2010; Feldman, 2009). In the end, the content of the leaked files has been shown to not undermine the argument that anthropogenic warming is occurring. What remains, however, according to Berkhout (2010), is to address the challenge of how to best respond to the climate change dilemma.

In addition to the credibility of climate science, as Doran & Zimmerman (2009) explain, efforts to measure and judge the scientific consensus on anthropogenic climate change (e.g. Oreskes, 2004; Montford, 2010) have also been openly criticized (e.g. Walther & Hughes, 2005; Peiser, 2005; Pielke et al., 2009).[16] Developing their own study, using what they argue is an unbiased approach, Doran & Zimmerman (2009, p. 23) find, however, that "the debate

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[12] Akbari et al. (2009) find that increasing the worldwide albedo of urban centres can reduce radiative forcing sufficiently enough to offset approximately 44Gt of CO2 emissions.

[13] Earlier, in Jones et al. (1990), the authors find that urban heating is not a significant factor contributing to the observed global warming trend.

[14] Chen et al., (2003) find that increasing energy associated with economic growth is driving Shanghai's UHI. Chung et al., (2004) show similar results for South Korea, arguing that the country's UHI is more likely the result of intense energy usage and changes in land cover resulting from rapid urbanization than increased temperatures associated with climate change.

[15] The scandal spurred skepticism (among some) about IPCC findings in general, i.e. claims that Himalayas could be ice-free by 2035, as discussed in WG2-AR4 (e.g. Manning, 2011).

[16] The Economist March 20, 2010, Briefing: The science of climate change – The Clouds of Unknowing, provides an interesting discussion on the uncertainties of climate science and a look into the appropriateness of the IPCC's wording within its Assessment Reports.

on the authenticity of global warming and the role played by human activity is largely nonexistent among those who understand the nuances and scientific basis of long-term climate processes."

While academic literature continues to explore both the mechanics of climate change and the consensus of its cause, a new scope of scholarly work addressing the media's coverage of the topic has begun to emerge (e.g. Boykoff et al., 2007; Boykoff, 2008; Staudt, 2008). Here, Staudt (2008) finds that mainstream media coverage of climate change has moved away from emphasizing the perspective of climate skeptics, and now rarely questions the scientific consensus. In the last three years, as Eastin et al. (2010) indicate, media coverage of climate change has increased radically.[17] In the UK, according to Boykoff (2008), much of the media coverage tends to target society's fears, focusing on the doom and gloom.[18] And though Sampei & Aoyagi-Usui (2009) find that public concern with regard to climate change tends to increase in line with media coverage, Anderegg et al. (2010), show that the American public continue to express doubt about both human induced warming, and the level of scientific consensus.[19] Perhaps, as Lookwood (2009) suggests, climate scientists continue to face opposition because they challenge the underpinning of Western consumerism and political allegiances (see also Malka et al., 2009; Nisbet, 2009). Along this line, as Walther et al. (2005) indicate, it is indeed a major achievement of the climate change research community that climate change has actually been elevated on the global political agenda.[20]

### 2.1.2. Chapter Purpose and Outline

The purpose of the Literature Review chapter is to provide an overview of the current state of academic literature surrounding the thesis topic, and in so doing, recognise where the literature lacks in attention. In this vein, the Literature Review chapter serves to hone the context of the thesis and ultimately rationalise the merit of the research itself, i.e. the Literature Review chapter identifies the gap in the current academic literature that the thesis intends to fill.

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[17] Bray & Shackley (2004) explore public perception of weather events in relation to their acceptance of anthropogenic climate change.

[18] See Hulme (2007) for a discussion on social fear about the future of climate change, discourse on the mastery of nature and the notion that government should protect society from fear.

19 According to Weart (2008), the possibility of greenhouse warming generated enough interest that it was included in an American public opinion poll in 1981. Interestingly, the poll found that over a third of American adults had heard about the greenhouse effect, and when asked directly, nearly 2/3 indicated that the problem was somewhat serious or very serious. Current trends will be discussed later in this chapter.

[20] See Cooper & Pearce (2011) for a local government (English) example of this trend.

This chapter is divided into four primary sections, (2.1) Introduction; (2.2) Climate Science; (2.3) Climate Policy; and, (2.4) Summary and Locating the Research. Building on the climate change debate discussed in the introduction, section 2.2 explores the state of the scientific literature in four broad categories: greenhouse gas emissions and temperature; glaciers and sea ice; oceans; and, geoengineering. Next, in section 2.3, the state of climate change policy is discussed in the context of its impact on the global political agenda, specifically with regard to literature on global mitigative efforts to combat the affects of anthropogenic climate change.[21] This then follows into an exploration of scholarly attention to organizations and their efforts to manage carbon. In the final section, section 2.4, in addition to providing a brief summary of the previous three sections, the gap in the literature is recognized, and the justification for the subsequent thesis is identified.

## 2.2. CLIMATE SCIENCE

### 2.2.1. Greenhouse Gas Emissions and Temperature

Interest in the relationship between atmospheric GHG emissions, namely CO2, and increases in global temperature have featured prominently in contemporary scholarship (e.g. Hansen et al. 2006; Mann et al., 2009). The notion that GHGs, or heat-absorbing gases, in the atmosphere may influence surface temperature is not new (e.g. Fourier, 1827; Tyndall, 1875; Arrhenius, 1896), however, nor is the belief that anthropogenic GHGs play a role in exacerbating this natural phenomena (e.g. Callendar, 1938). The role of anthropogenic climate change, albeit at an intermediate level, even featured in the Club of Rome's Limits to Growth in 1972.[22] And, in 1985, at the close of the International Conference on the Assessment of the Role of Carbon Dioxide and other Greenhouse Gases in Climate Variation and Associated Impacts, held in Villach, Austria, it was declared that, as the result of increasing atmospheric CO2, "in the first half of the next century, a rise in global mean temperatures could occur which is greater than any in man's history" (Pearce, 2010a, p. 33).

Since the industrial revolution, anthropogenic CO2, resulting from the burning of fossil fuels, has continued to rise, increasing at a rate of approximately 2 parts per million (ppm) per year

[21] While this chapter (and more broadly this research) focuses on climate change from a mitigative perspective, there is also a growing body of work that addresses adaptation, see for example: Urwin & Jordan, 2008; Twomlow et al., 2008. Eriksen et al. (2011, p. 7) provide an interesting discussion about the importance of recognizing that not all forms of climate change adaptation are necessarily good or appropriate, and present "four normative principles to guide responses to climate change." This is addressed once again in this chapter in section 2.3.4: Local Government Response.

[22] In Limits to Growth climate change featured as a possible scenario for how the planet might evolve as the atmosphere's ability to absorb CO2 declines (Meadows, 1972).

(Hansen et al., 2008), from 280ppm during pre-industrial times to 381ppm in 2006 (Thornes & Randalss, 2007). Study of the paleoclimate record indicates that though concentrations of atmospheric CO2 have varied over time (e.g Pagani et al., 2005; Loulergue et al., 2008; Luthi et al., 2008), atmospheric CO2 and temperature have been closely coupled over the past 800,000 years (Tripati et al., 2009). Similarly, the research shows that temperature increases over the past three decades is closely correlated with atmospheric CO2 (e.g. Broecker, 1975; Kuo et al., 1990; Hansen, 2006). And, as Esper et al., (2005) suggest, with improved techniques for interpreting proxy data and the paleoclimate record, confidence in such claims has increased.[23] Nonetheless, D'Arrigo et al. (2006) emphasize the importance of caution when drawing inferences on correlations from the paleoclimate record, particularly with regard to scale.

This warming is significant. As Hansen et al. (2006) find, global warming of more than 1C, relative to 2000, constitutes what they refer to as 'dangerous' climate change (see also Oppenheimer, 2005; Monastersky, 2009).[24] Hansen et al. (2010) add that global temperature over the past decade increased on par with the previous two decades, indicating that temperatures are on the rise. Conversely, Solomon et al. (2010) suggest that global temperature has been near flat since the late 1990s. Hansen et al. (2010)'s findings, however, are consistent with projections of the IPCC, which suggest that the average surface temperature of "Earth is likely to increase by 1.1-6.4°C by the end of the 21st century, relative to 1980-1990" (IPCC, 2007).

Models indicate that as the global temperatures continue to rise, the occurrence of extreme temperatures will also increase (e.g. Tebaldi et al., 2006; Alexander et al., 2006; Allan & Soden, 2008; Brown et al., 2008).[25] Sterl et al. (2008) add that the occurrence of extreme temperatures will increase at a rate greater than global mean temperature.[26] And, as Meehl &

[23] See Mann et al., 1998 and Mann et al., 1999 for an early, now controversial (e.g. McIntyre and McKitrick, 2003), temperature reconstruction using proxy indicators.

[24] Based on the analysis of results from a conceptual model of anthropogenic CO2 emissions (assessing the trade off between delay and action), Vaughan et al. (2009) find that immediate mitigative action is necessary if dangerous climate change is to be avoided.

[25] Extreme precipitation is also expected to increase (e.g. Botzen et al., 2010).

[26] According to Lomborg (2007), while an increase of 2C for England will likely translate into 2000 more heat deaths, it may also result in 20,000 fewer cold deaths.

Tebaldi (2004) indicate, the occurrence and geographic distribution of intense heat waves will also grow.[27]

Another interesting dynamic influencing global temperature is the role of air pollution, specifically aerosols (Mann et al., 2009; Wild et al., 2007). Ramanathan & Feng (2009) find that the dimming effect caused by aerosols may mask as much as 47% (albeit at uncertainty range of 20-80%) of the warming associated with GHGs. Given this phenomena, as efforts continue to tackle air pollution, the true impact of global warming may become more apparent and more alarming.[28]

### 2.2.2. Glaciers and Sea-ice

Glacier and sea-ice melt have become iconic symbols of climate change, and in line with popular interest, academic attention to the affect warming is having on these phenomena is on the rise. Because of challenges associated with the accuracy of instrument data (e.g. Chen et al., 2009), the debate surrounding the influence of global warming on Greenland and Antarctic ice-sheets has been ripe with controversy for the last two decades. In both Greenland and Antarctica the research shows a variation in ice-sheet mass balance. In terms of Greenland, the literature suggests that while marginal ice-sheet melt is accelerating, interior ice-sheets are thickening (e.g. Johannessen et al., 2005; Zwally et al., 2005; Chylek et al., 2006). And, as Chylek et al. (2004) indicate, Greenland's ice-sheet summit temperatures have actually declined at a rate of 2.2 degrees celsius (C) since 1987. Overall, however, Rignot & Kanagaratnam (2006) find that Greenland glacial mass loss has doubled over the last decade.

A similar debate persists with regard to Antarctica's ice-sheet mass balance. While it is widely held that Western Antarctica is losing mass (e.g. Thomas et al., 2004; Rignot et al., 2008; Chen et al., 2009; Hellmer et al., 2012),[29] in contrast to previous studies (e.g. Rignot & Thomas, 2002; Zwally et al., 2005), Chen et al. (2009) find that East Antarctica is also losing mass, particularly in the coastal regions. Additionally, Chen et al. (2009) show that,

[27] For a discussion on how climate change is affecting human health see for example, Patz et al., (2005) and Frumkin et al., (2008); and, how climate change is affecting forest fire occurrence and intensity, see for example, Podur & Wotton (2010).

[28] For further discussion on the role of aerosols, global dimming and climate change, see for example, Streets et al., 2006; Menon et al., 2008; Stanhill & Cohen, 2009; Badarinath et al., 2010; Kudo et al., 2011.

[29] Hellmer et al. (2012) show that increasing sea temperature has a significant influence on Antarctic ice mass loss, particularly in the Weddell Sea.

according to interferometric synthetic aperture radar (InSAR), Antarctic's rate of ice loss accelerated 75% from 1996 to 2006. This is particularly interesting given that Antarctic sea ice (different from ice-sheets) increased between 1979 to 2004, in spite of in-situ observations indicating warming in both atmosphere and ocean in the same area (Zhang, 2007). Ultimately, the thinning of both Greenland and Antarctic ice-sheets is more extensive and more pronounced than previously believed (Pritchard et al., 2009).

In terms of melting sea-ice, since the release of the Arctic Climate Impact Assessment Report in 2004, the Arctic has received a great deal of academic attention, particularly with regard to sea-ice decline. Arctic sea-ice, according to Lawrence et al. (2008), has been consistently in decline for the past several decades. Comiso et al. (2008) support this claim, adding that according to satellite data, the year 2007 saw an exceptionally low sea-ice cover.[30] Worryingly, Serreze & Francise (2006) believe that surface air temperatures in the Arctic are nearing a critical threshold[31] where summer solar radiation absorption is beginning to hinder sea-ice growth the following autumn and winter. This phenomenon also affects the surrounding permafrost, which is becoming increasingly vulnerable to increased heat accumulation (Lawrence et al, 2008).[32]

### 2.2.3. Oceans

Over the course of the last two decades, as climate change has become an increasingly prominent feature in everyday life, multidisciplinary academic attention to its influence on the world's oceans has ballooned (Willis et al., 2010). Much study has explored historical sea level trends, employing techniques such as marine sediment oxygen isotope analysis (e.g. Berger 2008) to delve millions of years into the past (e.g. Bintanja et al., 2005); modern measures are achieved by, for example, tide-gauge instrumentation (e.g. Church, 2006; Merrifield, 2009) and satellite altimeters (e.g. Willis et al., 2010).

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[30] In addition to having a myriad of impacts on the vitality of the Arctic ecosystem, a declining Arctic sea-ice cover also has the potential to affect Canada's sovereign claim to the Arctic Archipelago, and thus its resource wealth (e.g. Birchall, 2006).

[31] As mentioned previously, Arctic sea-ice is a key element of Earth's climate system. When the critical threshold is reached, small perturbations can cause disproportionately large reactions – potentially resulting in a trend of rapid ice-melt.

[32] For further discussion on permafrost dynamics associated with global warming, see for example, Smith, et al., 2005; Osterkamp, 2005; Bowden, 2010; Reyes, et al., 2010; Hollesen et al., 2011.

Contemporary sea level rise has been attributed to warming (e.g. Vermeer & Rahmstorf, 2009) associated with increased concentrations of atmospheric GHGs, and as Woodworth (2006) suggests, the modern rise in sea level is significantly larger than that measured over the past several centuries. As Milne et al. (2009a) explain, the current rise in sea level is attributed to two primary factors: land-based glacial melting (predominantly from Greenland and Antarctica) and thermal expansion of seawater. The relative contribution of these factors has generated increasing scientific attention (e.g. Johannessen et al., 2005; Shepherd & Wingham, 2007; Pfeffer 2008; Bamber 2009; Berger 2010), with the latest evidence, as presented by Vermeer & Rahmstorf (2009), projecting that the thermal share of sea level rise will decrease relative to the ice-melt contribution.

As the research demonstrates, global sea level is accelerating (e.g. Milne, 2009; Willis et al., 2010), and as Church & White (2006) suggest, if the current rate of acceleration is maintained, sea level in 2100 could range from 280 to 310 mm above 1990 levels. Such projections have spurred research into the geo-physical social implication of elevated sea levels, for example impacts on regional scales (e.g. Nicholls & Mimur, 1998; Dasgupta 2009), atoll islands (e.g. Webb & Kench, 2010) and coastal population concentrations (e.g. Anthoff et al. 2006; Crowell et al. 2007; McGranahan, 2007).

Along with sea level, the ocean's thermohaline circulation (THC) system has also stimulated academic interest (Boning et al., 2008; Dickson et al., 2002; Stouffer et al., 2006). Because the THC is a mechanism for transferring heat (vertically and horizontally) around the globe, it is potentially sensitive to weakening via increased melt water infusion, or fresh water forcing (e.g. Dickson et al., 2002). This has generated much debate, with Hakkinen & Rhines (2004) and Kerr (2004) suggesting that sub-polar circulation may have weakened in the 1990s, relative to the late 1970s and 1980s. Though later, Kerr (2006) argues that the THC system is not weakening. Jungclaus et al. (2006) contend that under realistic climate scenarios, there is no sign that the THC will shutdown this century.

If a THC shutdown were to occur, based on evidence from the ice ages, a cooling trend may result, particularly in the northern hemisphere (Schiermeier, 2006). But, as Vellinga et al. (2008) suggest, a shutdown may also reinforce global warming. Ultimately contention

remains (Clark et al., 2002; Stouffer et al., 2006), and as Knutti & Stocker (2002) suggest, predicting the future evolution of ocean circulation is complex. This notion leaves some to wonder whether the THC system is the Achilles heel of the climate system (Broecker, 1997).

In the meantime, the rise in ocean temperature is accelerating. Yet the link between hurricane activity and increasing surface and sea temperatures remains unclear. While Emanuel et al. (2008) find that the global genesis rate of tropical cyclones is decreasing, the regional genesis rate is on the rise. Saunders & Lea (2008) show similar results, indicating that a 0.5C increase in sea surface temperature in the Atlantic, translates into a 40% increase in Atlantic hurricane frequency. Knutson et al. (2008), on the other hand, find that warming of the Atlantic will result in fewer Atlantic hurricanes, but the most powerful of those that do occur will be even stronger. Here, in terms of storm intensity, the literature is more consistent, indicating that as surface and sea temperatures continue to rise, so too does the strength of hurricanes (e.g. Webster et al., 2005; Curry et al., 2006; Bengtsson et al., 2007; Irish et al., 2010).

Another area where academic interest is strong concerns how climate change affects the chemistry of the world's oceans in general. Over the course of the last 200 years, according to Zeebe et al. (2008), the oceans have absorbed approximately 40% of anthropogenic CO2 (see also Monastersky, 2009). And, as Kerr (2010) explains, the current rate of absorption is exceeding the ocean's ability to flush surface CO2 into the deep sea (where it is incorporated into the sediment), rendering seawater more acidic. As Caldeira & Wickett (2003) point out, if current rates of CO2 production continue, the ocean may experience changes in pH greater than it has experienced in the past 300 million years.

Implications of ocean acidification on marine life are not well understood at present (e.g. Doney et al., 2009; Talmage & Gobler, 2010). It is widely held, however, that marine fauna will be negatively impacted by a lower ocean pH (Hester et al., 2008; Doney et al., 2009). This is particularly the case for calcareous marine organism (e.g. Gazeau et al., 2007; Fabry et al., 2008; Talmage & Gobler, 2010), including coral reef ecosystems (e.g. Hoegh-Guldberg et al., 2007; Cantin et al., 2010). Moreover, Stramme et al. (2008) find that as temperatures rise, dissolved oceanic oxygen declines. Polovina et al. (2008) support this finding, indicating

that as temperatures have increased, global oligotrophic gyres (low-oxygen zones) have been expanding. Models predict ocean-oxygen declines of 1 to 7% over the next century (Keeling et al., 2010). With this decline, and the expansion of low-oxygen zones, marine ecosystems are likely to be negatively affected (Stramme et al., 2008; Keeling et al., 2010).

### 2.2.4. Geoengineering

Research in the field of geoengineering, as means to solve global climate change, has become mainstream (Maynard, 2009), with investigative efforts coming from such distinguished research institutions as, for example, NASA (e.g. Lane et al., 2007), and the United Kingdom's Parliamentary Office of Science and Technology (e.g. P.O.S.T., 2009) and Royal Society (e.g. R.S., 2009; Brumfiel, 2009). At its root, geoengineering involves manipulating the natural environment to meet a given end, in the modern instance, to counter the effects of global warming.[33] Simply put, geoengineering provides, as Barnett (2008) notes, an alternative to reducing greenhouse gas emissions.

In practice, geoengineering techniques are generally divided into two categories: carbon sequestration; and, solar radiation management. An example of carbon sequestration is carbon capture and storage (CCS).[34] CCS has emerged as a potentially strong solution to the global warming dilemma (Spreng et al., 2007), and as a result has recently generated much academic attention (e.g. Huijits et al., 2007; Spreng et al., 2007; Kelemen & Matter, 2008; Nikulshina & Steinfeld, 2009; Ehlig-Economides, 2010; Bickel & Lane, 2010). While CO2 capture is generally considered for point sources, such as a power generating plant, a parallel vein of research explores the feasibility of capturing CO2 from the ambient air (e.g. Nikulshina & Steinfeld, 2009). And, though CCS does promise a solution to the Western world's addiction to the burning of fossil fuels, at present, as Spreng et al. (2007) argue, the technology is energy intensive.[35] Moreover, Ehlig-Economides (2010) finds that the geologic reservoir required to support the storage of CO2 generated by a commercial power plant is significant in size, and thus diminishes the utility of CCS as carbon management measure.[36]

[33] As Keith (2000, p. 245) explains, "the distinction between geoengineering and mitigation is fuzzy," rendering it controversial as solution to global warming (Keith, 2000).

[34] The process of CCS involves the capture and subsequent storage of CO2 produced during the combustion of fossil fuels.

[35] According to Hamilton (2010), there are currently no coal-fired power plants capturing their carbon.

[36] Kelemen & Matter (2008) suggest further research into the viability of periodite carbonization as an affordable, long-term method of CO2 sequestration.

While research into the feasibility of CCS continues, public acceptance of the technology has also been explored. In a survey of people living near potential storage sites, Huijits et al. (2007) find that attitudes towards CCS, in general, are positive, but attitudes become more negative when the storage site becomes proximal to their neighborhood.

Another example of carbon sequestration is ocean iron fertilization (OIF). Proposed by Martin (1990), OIF differs from CCS in that its process and storage medium are facilitated by the ocean.[37] As Smetacek & Naqvi (2008) explain, OIF can be implemented relatively quickly, and can potentially improve zooplankton stocks, which could have the additional benefit of boosting whale populations. On the other hand, as the research (e.g Boyd et al., 2007; Smetacek & Naqvi, 2008) suggests, the caveat associated with OIF is the potential of oxygen depletion and algal blooms (e.g. Gilbert et al., 2005), both harmful to marine biota.

The second category of geoengineering, solar radiation management, involves altering, or controlling, Earth's albedo to reduce surface temperatures (e.g. Wigley, 2006; Morton, 2007). The two leading approaches that have attracted academic attention are cloud seeding (e.g. Bower et al. 2006; Latham et al., 2008; Jones et al. 2009) and aerosol dispersion (e.g. Crutzen, 2006; Rasch et al. 2008; Robock et al. 2008), both designed to increase Earth's albedo. In terms of the former, as Latham et al. (2008) explain, seeding maritime clouds with seawater particles, thereby increasing cloud reflectivity, can potentially balance the warming associated with atmospheric CO2 increases. Jones et al. (2009) find that a warming reductions of 0.6K, could defer future global warming by approximately 25 years. As the research demonstrates, however, cloud seeding does run the risk of altering the hydrological cycle, and therefore may impact precipitation patterns (e.g. Jones et al. 2009).

Though different in application, stratospheric aerosol dispersion also serves to increase planetary albedo. As Rasch et al. (2008) suggest, the injection of approximately 1.5 Tg of sulphur per year in the lower stratosphere could stabilize the doubling of atmospheric CO2.

[37] OIF involves fertilizing oceanic iron-limited phytoplankton, leading to blooms and subsequent sinking and deep-sea storage of organic matter containing atmospheric CO2 (e.g. Zeebe & Archer, 2005; Buesseler, 2008).

Robock et al. (2008) concur, indicating that a continuous injection of sulphur could in fact cause global cooling.[38]

Notably, Lenton & Vaughan (2009) emphasize the importance of employing geoengineering in parallel to CO2 emissions mitigation, rather than as an alternative to it. Building on this point, Matthews & Caldeira (2007) explain the harm in becoming dependent on geoengineering, indicating that warming could dramatically increase should the geoengineering practice fail or stop unexpectedly. What's more, Matthews et al. (2009) add that, though geoengineering may provide a means to control global temperature, be it via carbon sequestration or solar radiation management, it fails to address the problem of ocean acidification.[39] Ultimately, as the research shows, despite its complexity and potential for harm, geoengineering remains an intriguing solution to climate change (e.g. Schneider, 2008; Victor, 2008; Bickel & Lane, 2010).

## 2.3. CLIMATE POLICY

### 2.3.1. International - Kyoto Protocol

The literature on the current international climate change debate is vast (Ward & Boston, 2007), with much attention focused on the United Nations Framework Convention on Climate Change's (UNFCCC) Kyoto Protocol and the economics of a global climate change solution.[40] While the Kyoto Protocol has achieved acclaim for its merit as a multilateral agreement, according to Ward & Boston (2007), it has also attracted criticism for being "economically inefficient, environmentally flawed and politically impractical" (see also Barrett, 2005; Danish, 2007).[41] To this end, Howarth & Foxall (2010) caution that the Kyoto Protocol may only serve a symbolic purpose, and veil the actual environmental impact of climate change.[42]

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[38] In their investigation of the most effective geoengineering options, Lenton & Vaughan (2009) find that stratospheric aerosol injection is among the greatest alternatives for returning surface temperatures to pre-industrial levels.

[39] Harvey (2008) offers the infusion of limestone powder in the upper strata of the ocean as a potential solution to ocean acidification. The projected economic consequences of ocean acidification are also generating academic interest (e.g. Cooley & Doney, 2009).

[40] The Kyoto Protocol is an international agreement linked to the UNFCCC. The Protocol was adopted by consensus at COP3 in 1997 and came into force in 2005. Under the Protocol, developed nations agree to take on fixed and binding targets for GHG emission reductions, on average 5.2% below 1990 levels for the first commitment period (CP1), 2008-12. (e.g. Chichilnishy & Sheeran, 2009; Ward & Boston, 2007).

[41] As Muhovic-Dorsner (2005) suggests, the design of the Kyoto Protocol is flawed and allows for a number of loopholes, which can challenge policy commitment. And, according to Lomborg (2007), Kyoto is "impossibly ambitious."

[42] Lohmann (2005, p. 204) is similarly cynical of the carbon market stemming from the Kyoto Protocol: "that the scale and contradictions of the work needed to build the carbon market to which the Kyoto Protocol has committed its ratifiers have been greatly underestimated."

This notion was further fueled by the failure of United Nations Climate Change Conference in Copenhagen, in December 2009, to "reach an agreement on a new international legal architecture for addressing anthropogenic climate change post-2012" (Macintosh, 2010, p. 2964). While the conference did result in the creation of the Copenhagen Accord, which endeavours to hold global average temperature increases at 2C, without an international binding legal obligation, resolve remains illusive.[43] What's more, while 2C has emerged from the political debate as the metric for delineating dangerous anthropogenic warming, according to Anderson & Bows (2008), this metric has no scientific basis,[44] and thus can misguide policy action – as Bode (2006) suggests, the need to reduce atmospheric GHGs does not elicit much objection, it is the concrete targets that tend to spike disagreements. As Tol (2007, p. 424) adds, the 2C target is "supported by rather thin arguments, based on inadequate methods, sloppy reasoning, and selective citation from a very narrow set of studies."

Because of UNFCCC's restrictive definition of climate change, the Kyoto Protocol, and the global response in general, is ineffective and as Pielke (2005) suggests, has reached 'gridlock.' Pielke (2005) believes that the UNFCCC should adopt a more comprehensive view that incorporates science, policy and politics, such as that used by the IPCC. Additionally, as Tompkins & Amundsen (2008, p. 1) find, "though the Convention is clearly important, … it is not adequate to inspire national action to resolve the problems of climate change."[45] Vogler (2010) also notes that the lack of trust between member states is mounting, further challenging the Protocol's effectiveness.

Ultimately, as Boston & Kengmana (2007) emphasize, post-2012 policy discussion must address how ambitious global emissions targets must be, and determine how the burden should be distributed, between developed and developing nations, as well as within developed nations. And, importantly, Okereke & Bulkeley (2007) and Okereke et al. (2009)

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[43] 2010's COP16 in Cancun, Mexico, was equally anticlimactic, and barely made international news. 2011's COP17 in Durban, South Africa, also show's little sign of progress, with talks continuing to stall on a resolution to the problem of the world's biggest emitters not being bound to the treaty - either because they refuse to ratify the agreement (e.g. U.S.) or because they were not originally bound (e.g. China, India) (e.g. Eilperin, 2011).

[44] Chapman & Boston (2007) indicate that the origin of the 2C target is the EU and a number of other countries, based on available scientific evidences that suggest that an increase beyond 2C would be 'dangerous.' As noted earlier, Hansen et al. (2006) believe that warming of more than 1C, relative to 2000, is 'dangerous.'

[45] Tompkins & Amundsen (2008) add that while there remains no agreement with regard to the effectiveness of the Convention, there is in fact no actual consensus as to how best judge its effectiveness.

remind the academic community that the intrinsic, bureaucratic challenges of the global governance of climate change must be explored in future negotiations of post-2012 climate action, otherwise progress will be further stymied.[46]

### 2.3.2. International - Economics

According to Helm (2003), a part from perhaps population growth (a problem that is certainly interrelated with climate change), climate change is the largest economic problem the world has ever faced. The economic impacts of climate change and the cost associated with abatement have featured prominently in academic literature over the last decade. Beginning with early discussions on sustainable development (e.g. Brundland, 1987; Dyllick & Hockerts, 2002; Hopwood et al., 2005; Byrch et al., 2007; Byrch et al., 2009),[47] then building into the arena of atmosphere commoditization (e.g. Block, 2006; Morss & Hook 2005; Muhovic-Dorsner, 2005; Thornes & Randalls, 2007), the literature has, thanks perhaps to the release of the Stern Review in 2006, begun to hone in on specific economic dynamics associated with climate change. For example, the cost of climate change mitigation to the global economy (e.g. Stern, 2008a,b; Hepburn and Stern, 2008; Barker, 2008; Neumeyer, 2007; Weitzman, 2007; Yohe and Tol, 2007), equity weights across borders (e.g. Bohringer & Welsch, 2004; Anthoff and Tol, 2010; Eastin et al., 2010; Leaf et al., 2003), discounting through time (e.g. Kavuncu and Knabb, 2005; Nelson, 2008; Guest, 2010), the marginal damage cost of CO2 emissions (e.g. Tol 2005), and emissions trading (e.g. Braun, 2009; Clo, 2009; Engels, 2009; Lohmann & Sexton, 2010) are topics that have all become commonplace in the current academic literature.

Research into the economics of climate change received a boost of renewed interest following the release of the Stern Review in 2006. As Barker (2008, p. 173) explains, in his review, The Economics of Climate Change, Stern pushed the traditional disciplinary boundary of economic policy "from a single-disciplinary focus on cost benefit analysis to a new inter-disciplinary and multi-disciplinary risk analysis." Stern (2006) argues for decisive

[46] Okereke & Dooley (2010) explore the post-2012 climate negotiations with particular attention to the importance of reducing emissions from deforestation and forest degradation (REDD). See Backstrand & Lovbrand (2006) for an early discussion on forest carbon sequestration.

[47] According to Tregidga & Milne (2006), though sustainable development became mainstream in political and business forums in the 1980s, its history goes back further, with its beginning in environmentalism. The notion of sustainable development received another boost of legitimacy following the creation of the World Business Council for Sustainable Development (WBCSD) in 1992, which was linked to the Earth Summit of the same year, in Rio de Janeiro. Assessing post-Kyoto climate mitigation regimes, Streimikiene & Girdzijauskas (2009) argue that the only way to tackle climate change is via sustainable development.

and immediate action on climate change, suggesting that the benefits of near term action significantly outweigh the economic costs of inaction. According to Stern (2006), using formal economic modeling, the cost of immediate action, to stabilize at 500ppm, and to mitigate the 'worst impacts' of climate change, can be approximated to about 1% of global gross domestic product (GDP) per year, while the cost of inaction will likely exceed 5% of global GDP into perpetuity.

Stern's review, however, has triggered debate among academics (e.g Tol and Yohe, 2006; Nordhaus, 2007; Smith, 2010), particularly with regard to the technical aspects of his economic analysis. In fact, Weitzman (2007), for example, suggests that Stern's haste for action is not supported by the majority view of economic analysts. And, though Tol & Yohe (2006) agree that there is an economic case for immediate action, they caution that Stern's 'dubious economics' may further polarize the debate (see also Neumeyer, 2007; Yohe & Tol, 2007).[48] In Stern (2008b), the author further emphasizes the need for immediate action, indicating that the risks are greater now than previously believed.

The importance of equity weights has become prominent as a metric to distinguish the relative cost of climate change for a rich developed country versus a poor developing country (e.g. Anthoff & Tol, 2010; Anthoff et al., 2009). Often, as Leaf et al. (2003) point out, there is a tension between the developed and the developing world when it comes to economic policy to mitigate climate change (e.g. Najam, 2003; Patt, 2008); while the developed world emphasize a global response, the developing world argue that climate change is the result of the developed world's over consumption.[49] And though the principles of the UNFCCC (Article 3) do address equity, as Ward & Boston (2007) suggest, how these principles should be applied remains an ongoing debate within the international community (e.g. Rajamani, 2006; Boston & Kengmana, 2007).[50]

This tension is further heightened by the notion that while the developed world is indeed responsible for the increase in atmospheric GHG emissions (i.e. aggregate emissions since

[48] For Stern's response to his critics, see Hepburn & Stern, 2008; Stern, 2008a.

[49] According to Hoffman (2010, p. 1), while economic activity may be the driving force behind climate change, "individual beliefs, cultural norms and societal institutions guide the development of that activity."

[50] As ISIS (2009, p. 8) indicate: "Kyoto has slowed the reduction of carbon intensity. It has given developing countries the moral right to pollute… this arrangement threatens to invert the polluter pays principal into pay the polluter."

1750), it is the developing world that is most affected by, and least capable to adapt to, the impacts of climate change (e.g. Fussel, 2010; Tol et al., 2004; Mendelsohn et al., 2006; Srinivasan et al., 2008). Exacerbating the matter further, as Fischer et al. (2005) explain, as a result of the developing world's dependence on agriculture for trade, its economy is acutely vulnerable to the variability of climate change (e.g. Barnett & Adger, 2007).[51] Ultimately, as Chasek (2007) notes, the developing world continues to seek a solution that recognizes the common but differentiated responsibility noted in the UNFCCC (Article 3).

Given the connection between GDP and GHG increases, Eastin et al. (2010) remind us that the developed world's unsustainable consumptive habits must be curtailed (see also McDonough & Braungart, 2009; Hamilton, 2010). Along a similar vein, as the developing world continues to expand its economy (particularly India and China), it is expected that it will be responsible for over 90% of global GHG emission growth over the next century (Garnaut, 2008; see also Lomborg [2007] for a more general discussion of this issue).[52] This has triggered further discussion with regard to the notion of contraction and convergence, proposed by Meyer (2000), where along with a drastic reduction in global emissions, per capita emissions are gradually equalized across all countries (e.g. Bohringer & Welsch, 2004; Bohringer & Helm, 2008).[53]

Using the principles of sustainomics, Munasinghe (2010) suggests that in tandem with efforts to de-link the economy from carbon based technologies (e.g. Leaver & Gillingham, 2010), the developed world should provide the developing world with a 'safety net' to help adapt to the impacts of climate change; as Boston & Kengmana (2007) suggest, 'climate-proofing' development in the low-income countries could cost in the range of US$10 billion – US$40 billion annually. Moreover, as Karakosta et al. (2010, p. 1546) add, technology transfer from the developed to the developing world can act as a catalyst to promote "environmentally sound and sustainable practices, institutions and technologies."[54] Likewise, the middle-income countries (i.e. Brazil, China, India) should learn from the experience of the developed

[51] For a discussion on how national geo-social security is vulnerable as a result of climate change, see for example Barnett (2003) and Barnett & Adger (2007); see also Reuveny (2007) and Warner (2010) for a discussion on climate induced-migration.

[52] According to Ward & Boston (2007), developing countries are now responsible for over 50% of global GHG emissions, and thus the role of developing countries to mitigate global GHG emissions is increasing.

[53] For an interesting discussion on the values of contraction and convergence versus historical accountability, as a means to allocate emission rights, See Starkey (2008).

[54] See also GCN (2010), for a closer look at developed-country investment in clean energy technology in the developing world.

world and adopt innovative modern, low-carbon, technologies (e.g. Chasek, 2007). The importance of developing and middle-income country involvement in global climate talks is further emphasized by the dependance of these countries on black carbon intensive technologies. From a mitigation perspective, the reduction of such activities (i.e. improved crop management) and technologies (i.e. cleaner fuels, new cooking technologies) offers an immediate, albeit short-term, decrease in atmospheric warming (Baron et al., 2010).[55]

Furthermore, given the current financial crisis, the developed world could bolster its economy by investing in its own adaptive capacity (e.g. Aakre & Rubbelke, 2010). As Egenhofer (2008, p. 1) suggests, "politicians very rapidly have discovered climate change as the way to 'spend themselves' out of recession." And, as Huang et al. (2008) find, applying the Kuznets Curve hypothesis, GDP growth can occur while GHG emissions decline.[56]

Another area attracting scholarly attention concerns discounting, where values are drawn for outcomes that are expected in the future (e.g. Ramsey, 1928; Guest, 2010).[57] While the literature suggests that the economic risks associated with climate change justify immediate mitigative action (e.g. Ha-Duong et al., 1997; Nelson, 2008), it also warns that action must not impede economic growth, because it is economic growth that will assuage the projected damage associated with climate change (e.g. Philibert, 1999). Kavuncu & Knabb (2005) also note that it may be several generations before the economic benefits of early action are actually experienced. Ultimately, as Nelson (2008, p. 444) indicates: "the problem is that if we allow our economies to run along a business-as-usual path, we will bequeath to future generations a world whose life-sustaining capacities will be severely compromised." In which case, a dollar in the future could be more valuable than it is today – discounting is perhaps only appropriate if future generations are assured to possess greater wealth and capacity to cope with the effects of climate change (Chichilnisky & Sheeran, 2009).

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[55] According to Baron et al. (2010), within the scientific community, it is accepted that about 40% of current net warming is the result of black carbon. Black carbon has a relatively short residence time in the atmosphere (several weeks), and thus holds large potential for near-term carbon mitigation. Kandlikar et al. (2010) caution, however, that black carbon reductions, while important should be employed in conjunction with other CO2 emission reduction efforts.

[56] Huang et al. (2008, p. 239) indicate that: "at the beginning of economic development, environmental quality will deteriorate with economic growth. However, after reaching a peak point (turning point), environmental quality may improve with subsequent economic growth."

[57] Hillerbrand & Ghil (2008) draw attention to the moral dilemma of balancing duties to future generations against duties to the current generations.

Exploring the balance between the cost to reduce carbon dioxide emissions and the avoided cost of climate change impacts (e.g. Tol 2002a,b), Tol (2005) finds that the marginal damage cost of carbon dioxide emissions vary depending on the study, but will not likely go beyond $50/tC.[58] Tol (2005, p. 2072) notes that the studies with the most "pessimistic estimates of climate change impacts do not withstand a quality test". Tol (2005) concedes that though there is a high level of uncertainty, estimates can serve to benchmark costs for emissions abatement policies.[59]

Internationally, carbon, or emissions trading, both via voluntary and regulated mechanisms, has become the preferred path to mitigate GHG emissions, and a growing body of academic literature exploring carbon markets and emissions trading has emerged (e.g. Lohmann, 2006; Lohmann & Sexton, 2010).[60] The global carbon market, specifically the European Union's (EU) emissions trading scheme, came into law in 2005 when the Kyoto Protocol came into force, and has since grown considerably (Chichilnisky & Sheeran, 2009).[61]

In 2008 the value of the global carbon market reached 92 billion euros, with a marginal increase (despite the marginal increase, the result of the global recession and falling carbon price, credits traded rose by 68%) in 2009 to 94 billion euros (Murray, 2010). According to Bloomberg New Energy Finance, "in spite of the recession and little progress at international climate talks, the value of the global carbon market has continued to grow - albeit at a slower rate" (Turner, 2011, p. 1). In 2010 the value of global carbon traded increased 5%, with the European market accounting for 81% of total trades, and 2011 is projected to increase further yet, reaching 107 billion euros, a 15% increase over 2010 (Turner, 2011).[62] Chichilnisky &

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[58] According to Tol (2005, p. 2072), "if we take all studies without discriminating between them, the best guess for the marginal damage costs of carbon dioxide emissions is $5/tC, but the mean is $104/ tC. This difference reflects the large uncertainty combined with the notion that negative surprises are more likely than positive ones."

[59] See Pearce (2003) for a discussion on how to assess the 'right' figure for the social cost of carbon, based on research done in the UK.

[60] Carbon tax has emerged as the alternative to carbon trading. Like carbon trading, a tax is a market-based mechanism, but unlike a cap and trade system, the tax-based mechanism does not have an emissions cap. Zhang et al. (2011), exploring the effect of a carbon tax on coal emissions in China, show that "the use of a carbon tax scheme is one of the most practical policies that can mitigate the challenge of climate change. In the province of British Columbia, Canada, revenue from its carbon tax goes back into companies and individuals via reductions in income tax. The tax is currently valued at CAN $25 / tonne, and will reach CAN$30/ tonne in 2012 (The Economist, 2011). In Australia, starting in 2012, carbon from the country's 500 largest polluters will be taxed at AU$23 / tonne (Milne & Grubnic, 2011).

[61] The global carbon market's roots began to take form in the early 1990s, during a global climate and economics meeting hosted by the OECD in Paris France (e.g. Chichilnisky & Heal, 1995; Chichilnisky & Heal, 2000).

As Chichilnisky & Sheeran (2009, p. 33) indicate: "until the creation of Kyoto's carbon market, which is still in its infancy, there was little incentive to reduce emissions, since no one had to pay for them."

[62] Optimism surrounding growth of the global carbon market is likely to decrease as countries consider their next steps vis-a-vis phase two of the Kyoto Protocol.

Sheeran (2009) suggest that the price of carbon on the global market is likely to reach about $30 per tonne in the near future, which will generate about $900 billion each year. Randalls (2011, p. 127), however, cautions that while the carbon market is focused on the "calculative, managerial approach to the environment," in other words cost effectiveness, it fails to adequately address the ethical process that underlies its function as a mitigative tool.

Emissions trading has become a popular means for industrialized countries to mitigate GHG emissions, and is seen as a critical component in the global response to climate change (e.g. Egenhofer, 2007; Braun, 2009).[63] Since the launch of the EU Emissions Trading Scheme in 2005 - now the largest trading scheme in the world (Engels, 2009), academic attention to global emission trading has increased significantly (e.g. Kruger & Pizer, 2004; Engels et al., 2008; Egenhofer, 2007; Braun, 2009; Clo, 2009; Engels, 2009; Lohmann & Sexton, 2010).

While emissions trading requires countries and organizations to draw on new skills and expertise in order to succeed in the carbon market (e.g. Engels, 2009), the architects of such schemes face similar challenges (e.g. Kruger & Pizer, 2004). In exploring the effectiveness of the EU's Emissions Trading Scheme, for example, Clo (2009) finds that because of over-allocation of allowances, market scarcity is not ensured, thus rendering the scheme ineffective, both economically and environmentally.[64] Also, given the differentiated global approach to setting a price on GHG emissions, some country's businesses may face economic disadvantage over their competitors (Bartleet et al., 2010). Exacerbating the challenge further, as Lohmann & Sexton (2010) add, all the cap and trade systems launched to date, in an effort to gain their support, provide the biggest polluters with large pollution permits, resulting in a 'polluter earns' system. Zhang (2004) suggest that carbon/ energy taxes tend to show only modest results because the sectors where such a tax would be most effective are typically exempt on grounds of international competitiveness.[65] Ultimately, because the EU Emissions Trading Scheme fails to engage communities and residents, as Janner-Klausner

[63] Dagoumas et al. (2006) emphasize that in order for the Kyoto Protocol to be economically effective, national efforts must extend beyond domestic action, otherwise developed countries will experience significant costs.

[64] See Engels et al. (2008) for a discussion on the EU Emissions Trading Scheme Phase I (2005-07) and Phase II (2008-12) emission allowances.

[65] Based on empirical studies of existing carbon/ energy taxes, Zhang (2004) finds that competitive losses are not significant, and tend to be less than commonly perceived. Comparing a relative to an absolute GHG emissions cap, Quirion (2005) finds that, though quantifiably the difference is minor, an absolute GHG emissions cap yields greater welfare than a relative GHG emissions cap.

(2007) suggests, politicians may have missed an important opportunity to 'transform public attitude towards' climate change and climate change mitigation.

### 2.3.3. National/ Domestic

Academic attention to national climate mitigation strategies (e.g. Hennessy et al., 1996; Simeonova & Diaz-Bone, 2005; Buhrs & Christoff, 2006; Lorenzoni et al., 2007; Ye et al., 2007; Chapman, 2008; Hwang, 2010; Holmes, 2010; Howarth & Foxall, 2010) and the role of transnational cooperation (e.g. Pattberg & Stripple, 2008) is on the rise. As the literature suggests, government's from around the world are becoming conscious of the necessity to act on climate change (e.g. Pinkse & Kolk, 2009) and are beginning to develop long-term mitigation strategies (e.g. Bailey, 2007; Boston, 2008); the UK and Scottish Governments, for example, have set statutory targets for an 80% reduction in emissions by 2050, relative to 1990 baseline (Bebbington & Barter, 2011).[66]

As Buhrs & Christoff (2006) note, government political ideology is a key element in the determination of a country's environmental agenda. Dunlap & McCright (2008) echo this notion and suggest that this is particularly apparent in the United States, where the partisan gap on climate change is quite distinct; in the US the division between Republican and Democratic ideology with regard to climate is explored in the 'Six Americas' study (e.g. Leiserowitz et al., 2010; Hamilton, 2010).[67] Large political divisions on issues such as climate change tend to challenge the formation of a unified and coherent policy response (e.g. Griffiths et al., 2007).

However, even when the notion of climate change and the need for an international response is accepted across national political parties, a unified and coherent policy response may remain illusive. In NZ, for example, where "government has made many statements that indicate a commitment to sustainability and sustainable development" (e.g. Buhrs, 2008, p. 62),[68] the creation of a national climate strategy is hampered by indecision and the desire to

[66] Examining geographical variations in market environmentalism, Bailey (2007) indicates that signatories of the Kyoto Protocol have implemented a gamut of New Environmental Policy Instruments (NEPI) as part of the global response to climate change. Agnolucci et al. (2008) explore different scenarios (higher energy prices, behavior change and energy conservation, and high growth including investment in low-carbon energy) for achieving reduced carbon emissions.

[67] Referring to the Six America's study, Hamilton (2010) indicates that those who are convinced that warming is real and a serious threat (Alarmed) are primarily Liberals (48% Liberal; 14% Conservative), while those who do not accept that warming is real and remain wholly unconcerned (Dismissive) are primarily Conservatives (76% Conservative; 3% Liberal).

[68] Additionally, as noted by Buhrs (2008), sustainable development is a cornerstone of NZ's Resource Management Act 1991.

not get ahead of other countries (e.g. Chapman, 2006) that may perhaps have a greater mitigative impact, or more to lose.[69] For NZ, like many countries, decarbonizing the economy has an array of social and economic implications (e.g. Chapman & Boston, 2007), which are potentially outweighed by the insignificance of the country's overall contribution to the accumulation of atmospheric GHG emissions (e.g. Macey, 2007). But for NZ in particular, decarbonizing the economy may present unique economic challenges given its distinctive national emission profile – 49% of NZ's national emissions come from agriculture, a proportion more akin to developing economies (Renowden, 2007; Ward & James, 2007).[70] As a result, in terms of post-2012 international climate discussions, NZ is emphasizing the importance of recognizing the national circumstances of participant countries (Macey, 2007).[71]

Another element governments must consider when developing a climate mitigation strategy is the public's perception of risk (e.g. Leiserowitz, 2006; Lorenzoni et al., 2007). As Leiserowitz (2006) suggests, the public's perception of risk, or lack there of, can influence political action. Since perception is largely a function of experiential factors, this has the potential to impede mitigative action. This has fundamental implications for the development of an international climate mitigation response given that the majority of climate impacts are projected to occur not in the industrialized West, where the majority of emissions are generated, but in the developing world. Importantly then, as Rong (2010) reiterates, it is critical to include the developing world in future climate negotiations.

Yet from a GHG emission production perspective, the inclusion of developing countries in future climate mitigation talks is important for another reason: China is currently the world's largest emitter of CO2 (Lin & Sun, 2010).[72] Given China's heavy contribution to global emissions, the country's policy approach to climate mitigation has begun to attract increasing academic attention (e.g. Ye et al., 2007). Of particular interest, given China's massive export economy linked to the West, is the emission dynamic associated with trade (e.g. Weber et al.,

[69] Drawing on the state of California's plan to reduce emissions by 80% from 1990 levels by 2050, Chapman & Boston (2007) note that ambitious emission reduction policies do not necessarily harm the economy, and may in fact produce benefits.

[70] According to Renowden (2007), globally, agriculture accounts for about, on average, 14% of emissions, so NZ is quite high in this regard.

[71] NZ's climate change policy will be discussed further in Chapter 3.

[72] China's energy mix is currently dominated by coal-fired generation (80%). With the addition of 2 large coal power stations per week (at present), China is expected to have 1000 GW of new coal power by 2030 (Helm, 2008).

2008; Su et al., 2010). According to Lin & Sun (2010), China's production-based emissions exceed its consumption-based emissions, which under the current climate policy and international trade rules, results in carbon leakage.[73]

A similar area generating academic interests concerns product life cycle analysis, where the embedded carbon, including transportation needs, of a product is quantified (e.g. Saunders & Barber, 2008). Interestingly, because of different production methods, a product that travels a great distance to reach its market may indeed have a lower carbon footprint than one produced close by.

In terms of national climate mitigation policy focus, though the emphasis varies between countries, national policies typically concentrate on energy (e.g. Krumdieck, 2009; Ward & James, 2007b; Agnolucci et al., 2009), which given, the fact that energy supply is usually dominated by fossil fuel, is as Klein et al. (2005) suggests, a logical entry point. For Pinkse & Kolk (2010, p. 262), "energy transition seems necessary to lower dependence on fossil fuels." In line with this conclusion, energy policies tend to focus on the national grid's mitigative potential via renewable sources of energy (e.g. Sohel et al., 2009; Packer, 2009; Penniall & Williamson, 2009; Sovacool, 2009; Mason et al., 2010; Kelly, 2007; Barry & Chapman, 2009).[74]

In addition to energy, national climate mitigation policies generally focus on three other key elements: (1) Urban form and transport (e.g. Ishii et al., 2010; Chapman, 2008), including consideration for long-haul air travel and ship activity (e.g. Smith & Rodger, 2009; Howitt et al., 2010; Higmam & Cohen, 2010; Hare et al., 2010; Milne & Grubnic, 2011); (2) Agriculture (e.g. del Prado et al. 2010; Beukes et al., 2010), which according to Ward & James (2007a), is responsible for approximately 15% of global GHG emissions - about 2/3 of these emissions are from developing countries; And (3), forestry (e.g. Lasocki, 2001) and land use change (e.g. Schwaiger & Bird, 2010), which as Ward & James (2007c), note, account for 18% of global GHG emissions (24% of global CO2 emissions).

[73] As Renowden (2007) notes, because European goods already have a built-in carbon price, to avoid leakage, Europe has pushed for a carbon tariff on goods coming from countries that do not subscribe to global emission reduction activities.

[74] There is also research exploring the impacts of climate change on electricity demand (e.g. Mideksa & Kallbekken, 2010).

Despite its central position in public discourse, and though public acceptance of the need to take responsibility for climate change is arguably growing, it is unsurprising that Jordan and Lorenzoni (2007) wonder if in fact there is a political climate for policy change. This sentiment resonates with Chasek (2007, p. 117) as well, who questions whether the international community have the "political will to tackle climate change head on?" Climate change policy remains rife with complexity, perhaps as Helm (2008) suggests, because of a disconnect between science and policy (see also Anderson & Bows, 2008; Boston & Lempp, 2011).[75] As a result, little or no progress on emission reductions have been made to date by governments (e.g. Helm, 2008).[76] Yet key research reports commissioned by governments (based on the IPCC position) argue that in order to avoid runaway climate change, and to stabilise atmospheric GHG concentrations, most of the developed world must cut emissions by 80-90% by 2050 (IPCC, 2007d; Stern, 2008b). Ultimately, according to Boston & Lempp (2011), because of the transboundary nature of climate change causes and consequences, political commitment from individual countries to reduce GHG emissions remains untenable.

### 2.3.4. Local Government

Historically local government has not featured prominently in discussions on international policy, with regard to climate change, energy or otherwise. This trend began to change in the 1990s, however, when the Organization for Economic Cooperation and Development (OECD) published the results of its review of urban energy management (see OECD, 1995). Recognizing the important role of local energy management, as it was clear cities were large sources of energy related GHG emissions (e.g. Romero-Lankao, 2007), the EU developed a funding stream for local government that helped make possible the creation of energy management programmes within Europe (European Commission, 2004). This facilitated the emergence of local authority networks interested in sharing best practices in energy management and climate mitigation (e.g. Allman et al., 2004), both within Europe (i.e. the Climate Alliance and Energy Cities) and internationally (i.e. the Cities for Climate Protection [CCP]).[77]

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[75] Boston & Lempp (2011) explain that the barrier to international progress on climate mitigation is the result of four political asymmetries (inherent in liberal democracies): the voting asymmetry; the cost benefit asymmetry; the interest group asymmetry; and, the accounting asymmetry.

[76] According to Verweij et al. (2006), given the complexity and opposing views on the global climate change problem, a 'clumsy solution' that creatively addresses all the opposing views, is required to create an effective policy response.

[77] The availability of local government carbon management reports, which typically provide guidance on carbon quantification and mitigation, is on the rise. See for example; Introducing Local Authority Carbon Management (Carbon Trust, 2008); and, Carbon Neutrality Framework for Local Government (ICLEI, 2008a).

According to Betsill & Bulkeley (2007), these networks have since increased in both the size and the diversity of their membership, and equally, the importance of local government in international climate policy discussions has also grown (e.g. Lindseth, 2004; Aall et al., 2007; Parker & Rowlands, 2007). Likewise, academic attention to the role local government plays in climate change policy has begun to rise (e.g. Von Seht, 2002; Coene & Menkveld, 2002; Bulkeley & Betsill, 2005; Davies, 2005; Bulkeley & Kern, 2006; Bulkeley & Schroeder, 2008).[78] In the United States, local government and grass-roots initiatives have tended to fill the void left by the national government[79] when it comes to advancing the climate mitigation agenda (e.g. Knuth et al., 2007). This, as Lutsey & Sperling (2008) indicate, suggests that the US is more committed to climate mitigation than is globally perceived. That said, however, as Brody et al. (2010) demonstrate, the US public sector's response to climate change, be it via mitigation and/ or adaptation, remains weak.

As Betsill & Bulkeley (2007) and Romero-Lankao (2007) note, though interest in the role local government plays in climate policy has increased, academic attention to the experience of cities involved in climate mitigation has tended to focus on industrialized countries (e.g. Demeritt & Langdon, 2004; Wall & Marzall, 2006; Byrne et al., 2007; Granberg & Elander 2007; Brody et al., 2008; Peters et al., 2010; Cooper & Pearce, 2011[80]). Given that cities in the global South have in fact joined programmes such as CCP, for example (e.g. Dubeux & Rovere, 2007), this would suggest that perhaps the research has not yet caught up to practice (Betsill & Bulkeley, 2007).

In terms of areas of interest receiving academic attention, three primary areas emerge in the literature. The first involves motivation, exploring drivers for local government involvement in climate mitigation. Here, Bartlett & Dibben (2010) highlight the importance of champions as feature drivers for actualizing the climate agenda. In addition, local governments are beginning to appreciate the business case for carbon mitigation (e.g. Kousky & Schneider, 2003; Greenaway & Carswell, 2009). The second area of focus tends to deal with the barriers

[78] As Ball et al. (2009b, p. 579) explain: "the literature underlines the role of local government agencies in particular as having responsibilities and decision-making powers in traffic, public transport, economic development, housing, and urban land-use planning which have led to a degree of political support for climate change policies, but with authorities lacking central government political and financial support, as well as, in many cases, competence to act."

[79] As Brody et al. (2010, p. 591) explain, Obama is in the process of considering a "first ever US Federal climate change mitigation policy."

[80] Cooper & Pearce (2011) provide an interesting look at climate change performance measurements in local authority areas in England. Here, while the authors note that the vast majority of local area agreements include at least one climate change indicator as priority, the indicators are problematic.

local governments experience when it comes to the incorporation of climate mitigation policy. Here, notwithstanding Betsill & Bulkeley's (2007) observation that the academic literature tends to focus on industrialized cities, the literature suggests that political as well as administrative structures, or lack there of, tend to hamper the incorporation of climate mitigation activities, and this, though not isolated to the global South, is prevalent in the global South (e.g. Holgate, 2007; Kithiia & Dowling, 2010). The third area of academic focus concerns community engagement, exploring how local government engage their population and how authorities transfer emission mitigation values to the public (e.g.Wall & Marzall, 2006; Peters et al., 2010).

Though local government climate change policy has tended to focus on mitigation, as the affects of climate change become more apparent and immediate, a shift towards adaptation is likely to occur (e.g. Wilson, 2006; De Oliveira, 2009; Urwin & Jordan, 2008).[81] Laukkonen et al. (2009) concur, adding that local government policy concerning climate change must encompass both mitigative and adaptive action if it is to effectively reduce vulnerability.[82] Moreover, given their proximity to the community,[83] and often direct authority over local transport planning, land use change and spatial development (e.g. Coenen & Menkveld, 2002; Lindseth, 2004; Brody et al., 2010), local authorities can certainly, as Kok et al. (2002, p. 46) suggest, "play an important role in realizing national climate policy targets" (see also Sovacool & Brown, 2009). In line with this notion, according to Lindseth (2004, p. 325), data from around the world suggests that local authorities have jurisdiction over "policy measures that deal with 30-50% of national GHG emissions." Nonetheless, as Betsill (2001) suggests, in the absence of supportive policy at the national level, it is difficult for local governments to make significant contributions to climate change mitigation. Brody et al. (2010) add that while public sector decision-makers are in fact beginning to engage the climate change discourse, priority for action remains low.[84]

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[81] As Tol (2005) indicates, to speak of climate adaptation was at one time politically incorrect as it implied defeat, but now it has become a prominent feature on the political agenda (see also Giddens (2009); Eriksen et al., 2011). Klein et al. (2005) explore the importance of synergies between mitigation and adaptation policy. For literature on adaptive capacity, see for example, Burton et al. (2002); Twomlow et al. (2008); Engle & Lemos (2010).

[82] While many scholars (e.g. Horstmann 2008, Giddens 2009) express the need for a combined approach, there is a debate surrounding the potential conflict between climate mitigation versus adaptation (see Hamin & Gurran 2009).

[83] Whitmarsh (2010) indicate that while there is an urgent need to understand and facilitate community action on climate change mitigation, recent research suggests that this involvement is currently limited.

[84] Brody et al. (2010)'s study focuses on the USA, but results are consistent with NZ, as will be demonstrated in Chapter 8.

### 2.3.5. Organizations and Carbon Management

At the organizational (public and private) level of analysis, a growing body of academic literature explores the balance between environmental and economic objectives (Hoffman & Sandelands, 2005; Hoffman & Ventresca, 1999; Milne et al., 2009b; Birchall et al., 2010).[85] The literature suggests that businesses have only just begun to actively engage in climate and carbon management activities (e.g. Levy and Rothenbery, 2002; Hoffman, 2007a,b; Pinkse & Kolk, 2009).[86] Over the past decade climate change and energy related issues have increasingly attracted the attention of businesses (e.g. Fischer, 2000; Kolk and Hoffmann, 2007). And correspondingly, companies are beginning to go green, be it via creating more energy efficient products (e.g. Gross, 2007) or greening their fleet (e.g. Waters, 2007), and in the process, are attracting increasing media attention (e.g. BBC, 2004; Horovitz, 2007; Water, 2007; Gross, 2007; Montague-Jones, 2007). While Horovitz (2007) suggests that being green has become a strong marketing tool, some organizations – particularly within the fossil fuel industry – remain skeptical of climate change, and push hard to oppose any associated mitigative action (e.g. Ball, 2007; van den Hove et al., 2002; Ward, 2009; Vidal, 2010).

Ultimately, according to Okereke (2007), it seems economic and competitive motivation, as well as ethical considerations and governmental and public pressure remain the driving forces behind business strategies (see also Scipioni et al., 2010). As government policies and regulations begin to emerge,[87] organizations are argued to strategically evaluate their risk and opportunities in a carbon constrained economy (Dlugolecki, 2003; Busch & Hoffmann, 2007; Bui, 2009; Engels, 2009; Engels et al., 2008; Schultz & Williamson, 2005; Hoffman, 2006; Hoffman & Woody, 2008; Pinkse & Kolk, 2009; Bebbington & Barter, 2011).[88] For their part, Schultz & Williamson (2005) have identified a five-step process for turning strategic ideas into actions which will allow companies to gain competitive advantage in a carbon

[85] From the context of the individual, Whitmarsh (2009, p. 13) show that those who take action to conserve energy generally do so for reasons more aligned to economic savings as opposed to the environment: "surveys using energy reduction as an indicator of public response to climate change falsely assume that these can be equated; consequently, they will provide a distorted picture of behavioural response." See Whitmarsh et al. (2009) for a discussion on carbon capabilities, where the "individual's ability and motivation to reduce emissions within the broader institutional and social context" is explored.

[86] In the United States, for example, the Environmental Protection Agency's (EPA) Green Power Partnership works with an array of organizations across the country, from fortune 500 companies to colleges and universities and government organizations such as state departments and cities. Each year the Partnership publishes a list of the top 50 annual green power consumers. As of 5 October 2010, Intel Co. was at the top of the list with 1,433,200,000 kWh of green power usage, representing 51% of the company's total power usage (GPP, 2010).

[87] In June 2012 the UK Government announced regulations requiring, starting 6 April 2013, GHG emissions reporting (consistent with and the GHG Protocol and ISO 14064-1) by all main board companies on the London Stock Exchange. A review of the first two years will occur in 2015, with further decision in 2016 whether to expand requirements to all large companies (DEFRA, 2012).

[88] Busch & Hoffmann (2007) identify three steps companies could take to identify carbon constraints: first, appreciate the importance of the topic; second, identify exposure; and, third, establish corporate management strategies.

constrained economy.[89] In addition, the literature suggests that as climate change becomes mainstream, stakeholder pressure may influence organization response (Gonzalez-Benito & Gonzalez-Benito, 2006; Sprengel & Busch, 2010). Indeed, as Solomon et al. (2011) find, clients and investors are beginning to view climate change as a material risk, and as result are requiring organizations to manage the risk accordingly.[90]

In the end, given current uncertainty with regard to how government policy and the marketplace will react to climate change, organizations are hesitant to move too quickly (e.g. Kolk & Pinkse, 2007; Pinkse, 2007; Pinkse & Kolk, 2010)[91] and lead by example (e.g. Boiral, 2006; Jones & Levy, 2007; Aragon-Correa & Rubio-Lopez, 2007). The recent global financial crisis[92] has further exacerbated uncertainty (e.g. Kolk & Pinkse, 2009) and with organizations having less discretionary funding for environmental initiatives such as carbon offsetting, this has resulted in a decline in participation in the voluntary carbon market (Hamilton et al., 2010).[93] According to Estrada et al. (2008), prior to the global financial crisis, the voluntary carbon market had become mainstream, with, according to Lovell et al. (2009), market growth of 200% between 2005 and 2006. For some organizations, they remain reticent because of the feeling that their emissions are minor relative to organizations within their value chain (e.g. Hoffmann & Busch, 2008).[94] Nonetheless, keen organizations have begun to prepare for a carbon constrained world (e.g. Jeswani et al., 2007), and as Pinkse & Kolk (2010) note, this prompts organizations to further push their innovative capacity (see also Fischer, 2000).

As an initial step, many organizations are beginning to inventory their GHG emissions (e.g. Kolk & Pinkse, 2004), and correspondingly GHG inventory development and implementation are slowly beginning to feature in the academic literature (e.g. Pham et al., 2010; Kennedy et al., 2010; Smith & Heath. 2010). And as D'Avignon et al. (2010) indicate,

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[89] Schultz & Williamson (2005) use a cement company and a bank to illustrate their five-step process.

[90] Solomon et al (2011) explore the developing discourse of private climate change reporting. The authors find that in the absence of ethical discourse, private climate change reporting fails to challenge the business as usual status quo.

[91] As Kolk & Pinkse (2009, p. 2) suggest, "the overall policy context has been ambiguous with a range of national and international initiative, some binding, others voluntary, and with a multitude of actors involved." For a discussion on how policy, in general, tends to evolve in a non-linear fashion, resulting in a chain of resultant policy actions, see Van Buuren et al. (2010).

[92] As a consequence of the global recession, GHG emissions decreased (ISIS, 2009).

[93] See Kollmuss et al. (2008) for a good comparison of carbon offset standards re. the voluntary carbon market.

[94] Identifying a lack of academic attention to how personal ecological impacts are accounted for in the social accounting literature, Milne (2007) provides an interesting discussion on how our own individual activities contribute to climate change. See also Whitmarsh (2009).

emission inventories are becoming an increasingly important tool for both public (e.g. Schulz, 2010; Zhang and Chen, 2010) and private sector organizations, particularly with regard to the development and implementation of emission reduction activities. After all, once an organization understands its carbon footprint – including its supply chain, it can make informed decisions on business actions (e.g. Scipioni et al., 2010).[95] In a world that is becoming increasingly carbon-constrained, an appreciation of the organization's carbon footprint can help it identify both economic vulnerabilities and opportunities, and therefore assist in making the organization effective and profitable.[96]

Policies for carbon management, and for some, the ultimate goal of achieving carbon neutrality (Ball et al., 2011),[97] is on the rise, as is the academic literature exploring these trends (e.g. Gossling, 2010). Gossling (2010), for example, explores carbon neutrality in the context of tourism, an industry that represents 5% of global CO2 emissions. As Gossling & Schumacher (2010) indicate, many tourist destinations, in an effort to portray an image of being environmentally clean and pristine, are now seeking to become carbon neutral – the authors explore the measures taken to achieve carbon neutrality.[98]

Though some organizations are engaging in climate and carbon management activities, as Busch (2010) indicates, greater evidence of realised improvements is required. The literature further suggests that meaningful action does not always link with the rhetoric (e.g. Dale, 2008),[99] and often greenwash is the result (e.g. Pearce, 2008a,b, 2009; 2010b,c).[100] According to social environment and accounting research literature, though organizations are beginning to realise the value of being environmentally conscious (e.g. Lynes & Andrachuk, 2008), this is a criticism common to organizations engaging in environmental management

[95] For example, Herrmann & Hauschild (2009) show that shifting a company's manufacturing offshore from a developed nation to developing nation can substantially increase the carbon footprint of the product, and therefore the organization.

[96] A similar, but more specific, area attracting academic attention is product carbon footprinting, where the total life cycle of goods and services are calculated (e.g. Bolwig & Gibbon, 2009). The life cycle of goods and services includes consideration for production, processing, transportation, sale, use and disposal. See also McDonough & Braungart (2002) for a discussion of cradle to cradle thinking.

[97] Focusing on New Zealand, Australia and the UK, Ball et al. (2011) provide an informative discussion on governments leading by example on carbon neutrality.

[98] Carbon neutrality involves measuring emissions, reducing emissions where possible, and offsetting the remaining unavoidable emissions – an offset occurs when one actor invests in a project elsewhere that results in a reduction of GHG emissions that would not have occurred in the absence of the project (WBCSD/WRI, 2004; ISO, 2006).

[99] What's more, as indicated in the Carbon Disclosure Project's recently released Carbon Chasm report (CDP, 2012) and highlighted by Baue (2012), it is the market that seems to be driving organizational emission targets, not scientific evidence. This creates a gap between good intentions and the reality of what is really require to mitigate climate change.

[100] As Dale (2008) notes, consumers are not inclined to trust corporations – a survey of 2700 people in the USA and Britain showed that 9 out of 10 consumers are skeptical about information they get from companies.

and corporate social responsibility (CSR) as well (e.g. Gray & Milne, 2004; Milne et al. 2009b).[101] And, there is a strong agenda for research into carbon accounting (e.g. Hopwood, 2009; Milne & Grubnic, 2011)[102] linked to the question of the efficacy of proclaimed organizational carbon neutral strategies, for example.[103] Moreover, as Ball et al. (2009b) suggest, few studies have explored the relationship between reducing and offsetting emissions, what some in the field refer to as the manage/mitigate threshold. While offsetting does seem to dominate corporate carbon management strategies (e.g. Jordan and Lorenzoni, 2007; Thornes & Randalls, 2007), it holds the potential risk, as Gössling et al. (2007) suggest, of either directly or indirectly, encouraging a business-as-usual mentality (e.g. Milne, 2007). Lohmann & Sexton (2010) are also critical of carbon offsets, reminding us that it is in fact not possible to prove or disprove that offsets are actually distinct from business as usual, or that offsets are comparable to reducing emissions at the source. Furthermore, while the literature on carbon offsetting (e.g. Smith & Rodger, 2009), the Kyoto Protocol's Clean Development Mechanism and voluntary carbon market (e.g. Bumpus & Liverman, 2008) is growing, Lovell & Liverman (2010) indicate, much of it is polarized either for or against offsets in principle, rather than discussing offset types empirically.

Ultimately, organizations, whether they operate in the public or private sector, repeatedly lack strong leadership for environmental initiatives. As a result, weak policy regimes and business as usual (e.g. Jones & Levy, 2007) tends to remain the status quo.[104] This is compounded further by the complexity of the climate change problem in general. And, as Brody et al. (2010, p. 600) note, given that "organizations are inundated with so many complex issues... unless the problem is readily amenable to a solution, it is difficult to act upon in the face of other priorities."

[101] For a look into corporate motivation for taking part in CSR see for example Hackson & Milne (1996), and, Bebbington et al. (2009). See also Ball & Bebbington (2008) for a comparison of private and public sector environmental reporting.

[102] See also Milne et al. (2010) for a discussion on the 'seesaw' nature of GHG emission accounting associated with New Zealand's Kyoto commitment; thanks to improved methods of measurement, NZ's total emission liability are currently 4.7% lower than initially calculated in 2006 (NZ Govt., 2011b) .

[103] The efficacy of offsetting, in general, has been strongly called into question (e.g. Lohmann, 2006; Smith, 2007; Spreng et al., 2007), leaving Gossling et al. (2007) to suggest that the efficiency and credibility of voluntary carbon offset schemes requires increased clarity and regulation. Ascui & Lovell (2011, p. 978) suggest that while tension and contradictions continue to surround the meaning of carbon accounting ("carbon accounting clearly means different things to different people"), action to mitigate climate change will be stymied (See also Bowen & Wittneben, 2011).

[104] See Coenen & Menkveld (2002), for local authority context.

## 2.4. SUMMARY AND LOCATING THE RESEARCH

### 2.4.1. Summary of Chapter 2

Climate change has been a source of scientific interest and academic debate for many decades (Weart, 2003), with initial conceptions developing as early as the mid-late 1800s (e.g. Fourier, 1827; Tyndall, 1875; Arrhenius, 1896) into the mid 1900s (e.g. Callendar, 1938). Current study includes a plethora of scientific disciplines, ranging in research focus from atmospheric paleo-chemistry (e.g. Luthi et al. 2008), and surface temperature (e.g. Kuo et al. 1990; Hansen et al. 2006; Solomon et al., 2010), to sea ice (e.g. Comiso et al. 2008) and glacial melting (e.g. Chen et al., 2009; Pritchard et al., 2009), to sea level rise (e.g. Vermeer and Rahmstorf, 2009; Willis et al., 2010), ocean currents (Vellinga et al. (2008) and ocean chemistry (e.g. Polovina et al. 2008; Keeling et al., 2010), to geoengineering and climate change mitigation (e.g. Spreng et al. 2007) and adaptation (e.g. Jones et al. 2009) technologies.

Because climate change science is often arcane (to those outside the discipline) and moves extremely fast, with evidence of global climate change escalating throughout the 1980s, the IPCC was established (in 1988) to coordinate an international policy response. Using peer-reviewed and published scientific literature, the IPCC continues to evaluate the state of the science of climate change, and, importantly, makes policy recommendations based on the analysis of their results (Reilly et al., 2001; Oreskes, 2004).[105] According to their Fourth Assessment Report (IPCC, 2007d, p. 72), “most of the global warming over the past 50 years is *very likely* [IPCC emphasis] due to anthropogenic greenhouse gas increases….” This position is widely purported to represent the scientific consensus on anthropogenic climate change. To that effect the Nobel Prize in Peace (2007) was awarded jointly to the IPCC and Al Gore "for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change" (Nobel, 2007).[106] Oreskes (2004) agrees with the stance of the IPCC, and Doran and Zimmerman (2009, p. 23) concur, adding that “the debate on the authenticity of global warming and the role played by human activity is largely nonexistent among those who understand the nuances and scientific basis of long-term climate processes.” Yet there

[105] The IPCC is scheduled to release the Fifth Assessment Report (AR5) late 2013 through 2014: WGI - The Physical Science Basis, September 2013; WGII - Impacts, Adaptation and Vulnerability, March 2014; WGIII - Mitigation of Climate Change, April 2014; and the Synthesis Report, October 2014.

[106] Websites did not have page numbers, as a result no reference to page number will be provided.

does remain a body of literature that continues to debate (e.g. Morgan & McCrystal, 2009) and evaluate the strength and quality of climate change consensus (e.g. Anderegg et al., 2010; Pielke, 2009).

For those convinced by the IPCC (or a more pessimistic position – e.g. Lovelock, 2009), climate change is one of the most important environmental and socio-economic challenges facing society, particularly its poorest members. Yet the science upon which global policy increasingly and ultimately depends remains a source of confusion, as reflected most recently in the "climategate" incident in November 2009 (e.g. Jasanoff, 2010; Pearce, 2010a). As a consequence of climategate, "a poll conducted in February 2010, found a 30% drop over 1 year in the percentage of British adults who believe climate change is "definitely" real" (Jasanoff, 2010, p. 695). For the sceptical (see Montford, 2010), there is of course the possibility, as Oreskes (2004) points out, that the scientific consensus may in fact be wrong. Despite its central position in the public discourse, and though public acceptance of the need to take responsibility for climate change is arguably growing globally, it is unsurprising that Jordan & Lorenzoni (2007) wonder if indeed there is a political climate for policy change.

Climate change knowledge (e.g. Hulme, 2010) and climate change policy is difficult to manage, be it on an international, national or local scale (e.g Underdal, 2010).[107] Because of the complexity involved in generating a solution to climate change (e.g. Verweij et al., 2006), and because of the irreversibility of its trajectory, should emissions trends continue, climate change is considered, as Hovi et al. (2009, p. 20) indicate, to be a "quintessential long-term policy problem" (see also Lazarus, 2009), requiring as Verweij et al. (2006, p. 817) suggest, a 'clumsy solution.' And while climate change policy remains rife with complexity, little or no progress on emission reductions have been made to date by governments (e.g. Helm, 2008); this in spite of key research reports commissioned by governments (based on the IPCC position) that argue that in order to avoid runaway climate change and to stabilise atmospheric GHG concentrations, most of the developed world must cut emissions by 80-90% by 2050 (IPCC, 2007d; Stern, 2008b).

[107] Climate change is a complex problem for three key reasons: time lags between human action and environmental effect; problem is embedded in poorly understood complex systems; problem involves a global collective good (Underdal, 2010). See also Wood (2011), where the author applies game-theory to the climate change dilemma and the international response.

Internationally, both domestically (e.g. Chapman, 2008; Hwang, 2010; Holmes, 2010; Howarth & Foxall, 2010) and transnationally (e.g. Pattberg & Stripple, 2008), carbon, or ET, both via voluntary and regulated mechanisms, has become the preferred path to mitigate GHG emissions, and a growing body of academic literature exploring carbon markets (e.g. Bumpus & Liverman, 2008; Lovell & Liverman, 2010) and ET (e.g.; Lohmann & Sexton, 2010; Engels, 2009; Braun, 2009; Clo, 2009) has emerged.

Likewise governments from round the world are beginning to develop long-term mitigation strategies (Boston, 2008; Ball et al., 2011). This trend is also evident within local government, where the emergence of local authority networks (i.e. CCP) interested in sharing best practices in energy management and climate mitigation (e.g. Allman et al., 2004) is also on the rise. Policies for carbon management, with the ultimate goal of achieving carbon neutrality (e.g. Gossling & Schumacher, 2010), represent an idealised extension of these methods. And, within this scope, there is an emerging body of literature that explores the role of offsetting (e.g. Lovell et al. 2009; Estrada et al. 2008) and its actual effectiveness at ultimately reducing global emissions (e.g. Gössling et al. 2007).

At the corporate level of analysis (both within the private and public sector), organizations have only recently begun to engage actively in climate and carbon management activities (e.g. Hoffman, 2007; Pinkse & Kolk, 2009). It is argued that this trend is the result of a lack in strong leadership for environmental initiatives; were business as usual (e.g. Jones & Levy, 2007) remains the status quo. And, given the current ambiguity with regard to how government policy and the marketplace will react to climate change, organizations remain hesitant to push the agenda (e.g. Pinkse & Kolk, 2010). This trend has been intensified by the recent global financial crisis, which has resulted in a decline in participation in the voluntary carbon market (Hamilton et al., 2010). And while some organizations are engaging in climate and carbon management activities, meaningful action does not always link with the rhetoric (e.g. Dale, 2008; Pearce, 2010b). Offsetting tends to dominate management strategies (e.g. Thornes & Randalls, 2007), but the threshold at which offsetting becomes preferable remains a grey area (e.g. Ball et al., 2009b).

### 2.4.2. Locating the Research

Climate change is a visible and monumentally important issue affecting communities from round the world. By far the greater proportion of the study of climate change has explored the scientific base for current climate change (e.g. IPCC, 2007a; Hansen et al., 2010) on which global policy and ultimately organizational responses, (like carbon management and carbon neutrality) increasingly and in the end depend. More recently there has been a growing academic interest in examining international and national policies to address climate change (e.g. Okereke et al., 2009). Academic attention to carbon management strategies is not widespread but is indeed rising, exploring organizational strategies (e.g. Hoffman, 2007) and market-based schemes such as emissions trading and carbon offsets (e.g. Bumpus and Liverman, 2008; Engels, 2009).

There is a scarcity, however, of empirical academic work that examines how organizations, particularly public sector organizations, make sense of the climate change discourse, and how they determine strategies to manage their carbon and achieve carbon neutrality (e.g. Ball et al. 2009b; Brody et al., 2010; Milne & Grubnic, 2011).[108] NZ government organizations, are no exception, and while there is a growing body of literature that explores NZ's place in global climate policy (e.g. Chapman, 2006; Chapman & Boston, 2007), there remains a significant lack of academic work focusing on how NZ public sector organizations address climate change, and the role and efficacy of government mitigation activities (Ball & Grubnic, 2007; Ball et al. 2009b).[109] As a result, and through critical investigation of NZ government public sector organizations' cognitions, commitments and actions for carbon management and towards achieving carbon neutrality, this study therefore endeavours to narrow the gap in the literature and contribute to the scholarly discussion on climate change.

[108] As Rose and Cray (2010) note, scholarly attention to public sector (versus private sector) strategy formulation in general, is weak.

[109] NZ's climate change policy, and research associated with it, will be discussed further in Chapter 3.

# CHAPTER 3 - CONTEXT AND BACKGROUND

## 3.1. INTRODUCTION

### 3.1.1. New Zealand Climate Change Policy: A Quick Catch-up

NZ became a Party to the United Nations Framework Convention on Climate Change (UNFCCC) in 1992. Relative to other Annex 1 countries Party to the Convention, NZ's contribution to global greenhouse gas (GHG) emissions is low, at about 0.2%. What is particularly interesting, however, is that globally NZ has the 11th highest emissions per capita, and is among the developed countries with the highest increase in emissions from 1990 levels (NZ Govt., 2009c; NZ Govt., 2011b).[110]

Ratifying the Kyoto Protocol in 2002, NZ committed to reduce GHG emissions to or below 1990 levels (NZ Govt., 2009b). In 2007, in tandem with efforts to price carbon and develop an emissions trading scheme (NZ Govt., 2007b), Helen Clark's Labour-led government, sought to move the public sector towards carbon neutrality (e.g. Clark, 2007c).[111] In November 2008, John Key (National) replaced Clark as Prime Minister, and Labour's climate change policies were reconsidered.[112]

In line with National's new climate change agenda, NZ has adopted a target of 50% emissions reduction by 2050, based on 1990 emission levels. Moreover, while calculations have varied in the past, NZ's current net position during Kyoto's first commitment period is expected to be a surplus of 9.6 million Kyoto Protocol Units (9.6 Mt-CO2e) (NZ Govt., 2009a).

### 3.1.2. The CNPS and the CCP-NZ Programmes

The CNPS programme was launched by Clark's Labour government in February 2007. Led by the Ministry for the Environment, the initiative's goal was to move the government's 34 core public service departments, representing approximately 159,000 t-CO2e for base

[110] Milne & Grubnic (2011) note that while NZ's annual GHG emission growth has slowly begun to demonstrate contraction, 2009 gross emission levels nonetheless exceeded 1990 levels by 11.5 Mt CO2e (20%).

[111] As Prime Minister Helen Clark was in position of influence. An interesting avenue for future research relates to the degree to which Clark's ambition for carbon neutrality was supported by her Government. In other words, like Jean Chretien's decision for Canada to ratify the Kyoto Protocol, which faced significant opposition from business, provincial governments and from within his own cabinet (Harrison & McIntosh-Sundstrom, 2010), as champion, did Clark force the launch of the CNPS programme?

[112] This shift in Government ended the Labour Party's second longest period in power since its foundation in 1916 (Aimer, 2010). An interesting area for future research relates to why Labour lost the election, i.e. what explains the seven per cent vote share loss? Was it simply a reaction to the declining state of the economy and Labour's perceived (or actual) inability to regain the fiscal competence it enjoyed in 2002 and 2005?

2006/07 (NZ Govt., 2008), towards carbon neutrality.[113] Six lead-core government departments were chosen to become carbon neutral by 2012. While the six lead-core ministries were tasked with measuring and reducing their own emissions, it was the responsibility of the Ministry for the Environment to investigate and organise offsetting projects for all six ministries.

Though the core public sector accounts for only 2% of NZ's total GHG emissions,[114] the aim of the programme was to elevate NZ's international profile as a leader on climate change and carbon neutrality (NZ Govt., 2007b). The CNPS programme was discontinued by Key's National government in March 2009.

The CCP-NZ programme was the NZ arm of ICLEI's Cities for Climate Protection (CCP) campaign,[115] supported by the NZ Ministry for the Environment and delivered through ICLEI's Oceania Secretariat.[116] The CCP-NZ programme began in 2004, and during its operation included 34 councils (regional, district and city), representing in the order of 83% of NZ's population.[117] The total reported and quantifiable emission reductions from council activities, from base year (30 June 2004) to 30 June 2009, is conservatively calculated to be more than 400,000 t-CO2e (relative to generation of over 22,000,000 t-CO2e/year) (CCP-NZ, 2009). And though the purpose of the CCP-NZ programme was not carbon neutrality, it nonetheless helped councils reduce their corporate (operations) and community GHG emissions via awareness raising and targeted action on emission reductions (Ball et al., 2011).[118]

The CCP-NZ programme operated within the framework provided by the International Local Government GHG Emissions Analysis Protocol – New Zealand Supplement. The NZ Supplement applies the principles outlined in the International Protocol to the NZ context,

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[113] See Appendix, Table 3.1, for core departments and a list of abbreviations.

[114] As noted previously, the core public service does not include the broader state sector (e.g. Crown entities, schools, district health boards), but instead refers to the 34 government agencies that were mandated to participate in the CNPS programme (NZ Govt., 2007b).

[115] See Linseth (2004, p. 325) for an interesting discussion about the CCP campaign, where the author argues that CCP's "framing of climate change makes it difficult to see why and how climate change should be an important concern for local communities."

[116] The International Council for Local Environmental Initiatives, today known as ICLEI - Local Governments for Sustainability (ICLEI), was founded in 1990. ICLEI is an international, not-for-profit association of local governments and local government organizations, with 1105 members in 66 countries (CCP-NZ, 2009).

[117] See Appendix, Table 3.2, for a list of the CCP-NZ participants.

[118] Using the programme's strategic framework, councils worked their way through five milestones. These milestones helped councils to better understand their emissions profile, and provided a guide to help councils ultimately achieve emission reductions.

providing guidelines to help local governments quantify their GHG emissions (ICLEI, 2008a). Though the programme was not a mandated carbon neutral initiative, it resulted in awareness raising. The CCP-NZ programme was canceled in 2009.

### 3.1.3. Chapter Purpose and Outline

The purpose of the Context and Background chapter is two-fold: First, to provide an overview of NZ's policy response to climate change, including a look at its reduction goals and emissions profile; and second, to provide an overview of the CNPS and the CCP-NZ programmes, the two programmes which serve as the core of the thesis research. While this chapter does not provide an exhaustive look at NZ climate change policy, it does aim to chronologically contextualise the policy environment within which the CNPS and the CCP-NZ programmes developed and ended. In terms of the programmes background component of the chapter, in addition to presenting the mechanics and results of each programme, this chapter, albeit indirectly, provides insight into programme execution and uptake. And while this chapter does not seek to provide analysis of the organizations' emission inventories and reduction plans,[119] it does provide support material for the analytical chapters to follow (e.g. Chapter 8).

This chapter is divided into five primary sections, (3.1) Introduction, (3.2) New Zealand Policy Response to Climate Change, (3.3) The Carbon Neutral Public Service Programme, (3.4) The Communities for Climate Protection - New Zealand Programme, and (3.5) Summary and Locating the Research. Building on the introduction, section 3.2 discusses NZ's policy response to climate change, specifically from 1992 through to the end 2011. Furthermore, this section explores NZ's emission reduction goals and projected emissions, and provides a general review of NZ's GHG emissions profile. Sections 3.3 and 3.4 provide a more focused overview of the CNPS and the CCP-NZ programmes, including attention to programme approach, emission inventory data, emission reduction plans, and realised emission reductions. Here, the chapter speaks in general about each programme in terms of its total membership, then hones in on the six lead-core departments for the CNPS programme and the 16 study selection councils for the CCP-NZ programme. The final

[119] See for example, Ball et al. (2008), Mason & Ball (2008) and Ball et al. (2009a) for an analysis of CNPS programme participant emission inventories.

section, section 3.5, in addition to providing a brief summary of the previous four sections, locates the chapter in the overall thesis research.

## 3.2. NEW ZEALAND'S POLICY RESPONSE TO CLIMATE CHANGE

### 3.2.1. New Zealand's Policy Response to Climate Change

The passing of the Environment Act 1986, the Conservation Act 1987 (both under Lange's Labour-led government)[120] and the Resource Management Act 1991 (Bolger's National-led government), demonstrated to the world that NZ was committed to environmental reform (e.g. Buhrs, 2003). During this time Government began to explore market environmentalism, or neoliberal policies as a means to correct previous economic problems (e.g. Peck, 2004).[121] While proponents of market environmentalism argue that this approach makes more efficient use of natural goods (e.g. Bakker, 2005), it is ultimately a market-driven mechanism, and as some scholars suggest, oversimplified in application (e.g. Prudham, 2004; Mansfield, 2004, 2006). As Kirk (2008) explains, market environmentalism, and free-market thinking in general, tends to ignore the notion that resources are unevenly distributed within society. Though this suggests that some within society are more economically capable to protect the environment, it also implies that others are in position to gain economically by exploiting the environment.[122]

While market environmentalism continues to influence policy in NZ, environmental policy in general tends to develop in an *ad hoc* reactionary manner, leaving it especially vulnerable to political change (e.g. Buhrs & Christoff, 2006). This characterisation is particularly accurate in the context of NZ's response to the global climate change crisis. In this respect, as Buhrs (2008, p. 61) comments, NZ's response has been based on a "narrow interpretation of what the challenge is: reducing GHG emissions in the most cost-effective way." Having economics as the central thread in a climate mitigation strategy tends to miss the importance of sustainable development and the need to address associated environmental issues and their

[120] The Environment Act 1986 created the Ministry for the Environment; the Conservation Act 1987 created the Department of Conservation.

[121] Market environmentalism, or neoliberalism, specifically in the context of climate mitigation, as believed by its proponents, will stimulate environmental conservatism, or the reduction in GHG emission-heavy activities, via price signals, thus incentivising environment improvement through economic gain (e.g. Mansfield, 2004, 2006); the market (consumerism) is viewed as the solution to the global climate change problem instead of the driver.

[122] In this view, by treating environmental goods as economic goods (and establishing property rights), and incorporating externalities, environmental goods will be used more efficiently. But, market environmentalism tends to view environmental destruction as a moral issue, rather than a utilitarian issue, and therefore as mentioned within, oversimplifies the reality of the situation.

economic and social causes (i.e. unsustainable consumption etc.), as alluded to in the previous chapter.

As Chapman (2006) explains, like other countries, NZ is quick to offer a plethora of justifications for its inaction: more information is required to make a prudent decision; government is faced with other pressing priorities; NZ's impact on mitigation is small, others should act first (including the private sector); at present the cost is prohibitive.[123] As a result, NZ's response has been described as lacklustre and inconsistent, with mitigative policy plagued by government indecision and policy reversals (Chapman & Boston, 2007).

While 2008 marked the most recent shift in NZ's climate policy, it was not the first.[124] NZ became a Party to the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 (Bolger's National-led government), signed the Kyoto Protocol in 1998 (Shipley's National-led government), and ratified it four years later in 2002 (Clark's Labour-led government).[125] In line with its commitment to the Protocol, in 2002 NZ launched its Climate Change Policy Package (e.g. DPMC, 2002), which included a carbon tax[126] intended to create a price advantage for clean energy. In 2005, however, after significant opposition from the business community, this package was reviewed, with the recommendation not to proceed with the carbon tax (Buhrs & Christoff, 2006). Later in 2006, Cabinet approved a whole of government climate change work programme, which positioned action on climate change as a long-term effort.

Following, in December 2007 Clark's government introduced the Climate Change (Emissions Trading and Renewable Preference) Bill, which amended the 2002 Climate Change Response Act (Parker, 2007) and expressed government's intention to establish an economy-wide

[123] Chapman (2006) offers a framework for action on climate change, including: setting challenging targets with international signaling value; the need to learn from other countries' experience; development of broad-based policy measures; long-term policy planning, including the avoidance of policy switches.

[124] The National Party (centre-right, formed in 1936) held government, most recently, from 1990-1999; 2008 until present. The Labour Party (centre-left, formed in 1916) held government, most recently, from 1999-2008. In 1999 Labour formed a coalition with the Alliance Party, in 2002 and 2005, a coalition with the Progressive Party. In 2008 and 2011 National formed a coalition with the ACT, United Future and Maori parties. See Miller (2010) for an in-depth discussion of New Zealand government and politics.

[125] Buhrs & Christoff (2006) note that while the Labour-led government supported Kyoto, the National Party expressed opposition.

[126] Labour had intended the carbon tax to begin in 2007 at a price of $25/t, and would apply to the whole of the economy, with the exception of agricultural CH4 and N2O (Hodgson, 2005).

emissions trading scheme (e.g. MFE, 2007).[127] According to Clark (2007b): "The Government believes that an emissions trading scheme which puts a price on emissions creates the right incentives across the economy to use fuel and energy more efficiently." For Government, the emissions trading scheme offered the most cost effective, flexible, and equitable means to reduce GHG emissions.[128]

Though the scheme was to include all sectors of the economy, including agriculture, and include all six GHG gases covered in the Kyoto Protocol (CO2, CH4, N2O, HFCs, PFCs and SF6)[129], which would make it a world first (Bullock, 2009), the Green Party felt that the scheme's requirements were not onerous enough (Bullock, 2009).[130] And while some believed Labour's scheme was too easy on big emitters (e.g. Bertram & Terry, 2008), others felt that it placed NZ in a position of "running before the international community [could] even walk on climate change matters" (Bullock, 2009, p. 3). Fear surrounded the notion that the scheme would place NZ at an economic disadvantage relative to its international competitors that did not adopt similar policies (e.g. Castalia, 2007).[131] Smith (2008) expressed that the "bill [was] riddled with errors... that [it would] cost New Zealand households and businesses dearly." Speaking after the fact, National argued that Labour's emissions trading scheme would have potentially caused the loss of 50,000 jobs, and cost the economy in excess of $900 million by 2012 (Raea, 2009).[132] Rodney Hide, from the ACT Party,[133] concurred with Smith's economic fears, and went on to add that climate change was a hoax:

> The entire climate change - global warming hypothesis is a hoax, that the data and the hypothesis do not hold together... Enacting this legislation will

[127] The NZ Emissions Trading Scheme was planned to align closely with Australia's proposed Carbon Pollution Reduction Scheme, including common compliance, where possible. In 2010 the Rudd government announced that it would delay the implementation of the scheme until after CP1, and implementation would only occur when greater efforts from other major economies presented (DCCEE, 2010). Interestingly, like the NZ Emissions Trading Scheme, CPRS was to include the agriculture sector (Saddler & King, 2008).

[128] Government was confident in an emissions trading scheme largely because many other nations were adopting similar schemes, and modeling predicted minimal impact on economic growth (MFE, 2007).

[129] CO2 = carbon dioxide; CH4 = methane, N2O = nitrous oxide, HFCs = hydrofluorocarbons, PFCs = perfluorocarbons and SF6 = sulphur hexafluoride.

[130] As Bullock (2009, p. 10) notes, while reactions to Labour's emission trading scheme were varied, the Green Party "expressed concern that the Bill did not go far enough, having traditionally preferred a carbon tax." Because permits were allocated instead of being auctioned, Bertram & Terry (2008) conclude that the scheme was more a tax than an emissions trading scheme. While this is supported by the fact that Labour's scheme did not have a domestic cap, it does not fit with NZ's obligation under the Kyoto Protocol's CP1 (e.g. Bullock, 2009).

[131] In discussing emissions trading scheme-related emissions costs, Bartleet et al. (2010) emphasize the need to remain cognizant of international trade competitiveness, particularly with regard to emission-intensive sectors that are also export-intensive, such as the manufacturing sector.

[132] The National and ACT Parties both openly criticized Labour for their haste in pushing through the Emissions Trading Scheme in last their last days in government (Raea, 2009; Bullock, 2009).

[133] The ACT Party has a neo-liberal ideology, based in the belief of personal freedom of choice, where Government protects freedoms but does not assume responsibility:http://www.act.org.nz/principles.

> cost New Zealanders dear... It will put businesses in New Zealand out of business. It will put farmers off their farms. And it will do all this for no impact on world weather, for no environmental gain, and for no conceivable advantage to New Zealand or to the world (Hide, 2008).

Also in 2007, Clark announced a raft of sustainability initiatives which included the CNPS programme (NZ Govt., 2007b; Clark, 2007c).[134] Though the public sector accounts for only about 2% of NZ's total emissions, the aim was to elevate NZ's international profile as a leader on climate change and carbon neutrality (NZ Govt., 2008); with the initiative conceived as "the only comprehensive central government programme with robust systems and methodologies to work through the challenges posed by a public service carbon neutrality programme…" (NZ Govt., 2008).

In November 2008, Key (National) replaced Clark as Prime Minister, and Labour's climate change policies were reconsidered. Firstly, legislation enabling the NZ Emissions Trading Scheme, which had been passed into law in September 2008,[135] was reviewed, and subsequently the legislation was modified. Under Key's National government the scheme has become NZ's principal policy tool for achieving GHG emission reductions.[136] National was acutely aware of the economic concerns surrounding the scheme. To this end, when the Climate Change Response (Moderated Emissions Trading) Amendment Act 2009 received royal assent at the end of 2009, National emphasised its plan to "get the emissions trading scheme right and [that it] is not prepared to cut corners when kiwis' financial security is at risk" (Key, 2008b). Labour, on the other hand, contends that National's emissions trading scheme is "economically irrational, socially inequitable, environmentally counter-productive and fiscally unsustainable" (Chauvel, 2009).

While National's scheme did intend full obligation for the transport, electricity and industrial sectors on 1 January 2013, and the rest of the economy by 2015, Smith has announced a slowing of the next stage of the emissions trading scheme: "National's intention is to phase this in three equal steps on 1 January 2013, 1 January 2014 and 1 January 2015 as

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[134] According to Greenaway & Carswell (2009), since 2003, sustainable development and climate change thinking has become progressively linked at national, regional and local levels.

[135] The Emissions Trading Scheme was very controversial, requiring extensive amendments before passing into law in 2008.

[136] As Raea (2009) notes, according to Smith, the Emissions Trading Scheme is NZ's "most significant economic reform since economic deregulation in the late 1980s." While the NZ Emissions Trading Scheme is administered by both the Ministry of Economic Development and the Ministry for Agriculture and Forestry, the Climate Change Response (Emissions Trading) Amendment Act is administered by the Ministry for the Environment, with the exception of forestry and agriculture, which is administered by the Ministry for Agriculture and Forestry (e.g. Bullock, 2009).

recommended by the Emissions Trading Scheme Review Panel" (Smith, 2011c). And though the agriculture sector was due for full obligation in 2015, this is not likely to occur.[137] According to Smith (2011c), this new path assuages the economic impact on the economy, while continuing to push the progress needed to stimulate investment in carbon abatement, i.e. renewable energy, clean technologies etc.[138] In terms of emissions connected with the agriculture sector, as part of its climate change mitigation strategy, the NZ government funds the Centre for Agricultural Greenhouse Gas Research, where research targets emission improvements associated with ruminant methane, nitrous oxide and soil carbon from the pastoral and horticulture sectors (Carter, 2009).

Secondly, on 11 March 2009, Minister for Climate Change Issues and Minister for the Environment, Nick Smith, ended the CNPS initiative, thus stemming efforts to move the public sector towards carbon neutrality.[139] Before National was elected to lead the NZ Government it openly recognised the global importance of climate change: "The biggest environmental challenge of our time: global climate change…The National Party will ensure that New Zealand acts decisively to confront this challenge" (Key, 2007). And, National advocated the need to incorporate climate policy into economic growth plans: "National is committed to growing our economy. Confronting climate change will be a vital part of the policy mix for fuelling that growth" (Key, 2007). After National won the election, in a speech to the National Party Conference in 2008, the Prime Minister identified the need to get beyond the "ideological battles of the past" suggesting that "New Zealand's future depends on grasping good ideas, no matter where they come from" (Key, 2008a).

For National, however, Labour's initiative to "lead the world on climate change and to become the first carbon neutral country" (Smith, 2009a) was a "feel good slogan" (Smith, 2009b), not a good idea. Buhrs (2008, p. 61) notes that Labour's initiatives were "largely of a technical and managerial nature," and failed to address the underlying problem of emissions generation. In this same vein, Smith (2009c) argued that "to make real progress on climate

[137] The inclusion of emission from the agriculture sector in the NZ Emissions Trading Scheme may have been overly ambitious in the first place, particularly given that NZ is among the first to include this measure (e.g. Raea, 2009); this sector is responsible for the greatest share of NZ's emissions, which is perhaps indicative of Smith's decision to hold off on its inclusion in the Emissions Trading Scheme. While Castalia (2007) suggests that significant emission abatement from agriculture is not likely without a decrease in output, others argue otherwise (e.g. Clark, 2007a; Bertram & Terry, 2008; Beukes et al., 2010).

[138] For discussions on NZ's potential for renewable energy generation, see for example: Barry & Chapman (2009); Krumdieck (2009); Packer (2009); and, Penniall & Williamson (2009).

[139] When Smith ended the CNPS programme he expressed the following opinion: "The Carbon Neutral Public Service was just a feel good slogan cooked up by the previous Government. Its only achievement was to cost this country millions of dollars" (Smith, 2009b).

change we need to ensure that phrases like carbon neutral have integrity... The climate change policy the Government inherited was not credible… we have to give New Zealand's climate change policy a reality check. We are not claiming New Zealand can be a world leader in emissions cuts or the first carbon-neutral country in the world." For the National-led Government, while it wants to do its fair share in reducing emissions, it does not want NZ to lead on climate change: "the new Government's policy goal is not about being first but ensuring New Zealand does its fair share" (Smith, 2009a). As Chapman & Boston (2007) note, however, because of NZ's relatively high emissions and income per capita, and capacity for energy systems improvements, the international expectation may be that NZ "contribute disproportionately" to emissions mitigation efforts. That said, in terms of leading on climate mitigation, as the National-led government recognises, there exists a potential economic advantage in being a follower on GHG emissions abatement (e.g. Boston & Lempp, 2011).

Thirdly, the NZ Energy Strategy of 2007 implemented under the Labour-led government and emphasising sustainability as a core objective (see MED, 2007a),[140] was replaced in 2011 by a new NZ Energy Strategy in which economic growth became the key objective (MED, 2011). With this strategy National highlights the tie between economic performance and social wellbeing and energy security, emphasising the importance of fossil fuels.[141] Notwithstanding the new strategy's mandate for exploration, exploitation and utilisation of fossil fuels, however, the strategy does acknowledge that environmental management is critical if NZ's economy is to reach its potential (MED, 2011).

In this vein, in 2011, Government launched the National Policy Statement for Renewable Electricity Generation (NPSREG), which sets out National's agenda for renewable electricity generation under the Resource Management Act of 1991. As mentioned earlier, the enactment of such legislation was considered ground-breaking at the time, demonstrating NZ's desire to show leadership in this area (Bebbington et al., 2009). Wind is expected to play a large role in renewable energy development. Though wind farms represent less than 2% of net electricity (about 322 MW), new applications for development, representing some 3000 MW (or 30% of

[140] This was preceded by the 2001 National Energy Efficiency and Conservation Strategy, which developed following the Energy Efficiency and Conservation Act 2000. This strategy focused on three key policy efforts: energy efficiency, energy conservation, and development of renewable energy (e.g. Kelly, 2007).

[141] According to Krumdieck (2009), more than 25% of NZ's electricity is generated by gas, but at current depletion rates this figure is expected to decline, leaving coal as the primary non-renewable fuel source (Kelly, 2007).

NZ's total capacity), have been lodged (Krumdieck, 2009).[142] Moreover, though the proportion of electricity generated by renewable sources has decreased in recent years (Barry & Chapman, 2009), with the NPSREG, National has set a strategic target whereby 90 per cent of the country's electricity will be generated by renewable energy sources by 2025 (NZ Govt., 2011a). The caveat to this goal is that supply must not be impeded (NZ Govt., 2011a). Interestingly, while this goal was originally set by Clark's Labour-led government, and though Key's National-led government now endorses a 90% renewable energy target, when it came into power in 2009 it did not (Krumdieck, 2009).

At the local level, the Local Government Act 2002 mandates local authorities to operate in an environmentally sustainable manner. While the Act does not require local authorities to measure, manage or reduce the environmental effects, including the carbon footprint, of their activities (OAG, 2011), it does "promote the social, economic, environmental and cultural well being of communities in the present and for the future" (LGNZ, 2011b; see also Wilson & Salter, 2003).[143] And with the passing of the Energy and Climate Change Amendment to NZ's Resource Management Act 1991, in 2004, greater responsibility for action on climate change was shifted to local authorities (Greenaway & Carswell, 2009).[144] In this vein, the authors also note that local government recognise that planning for climate change is good business sense. In an effort to promote climate change mitigation, and to facilitate local government organizational awareness with regard to their carbon footprint, in 2004 the Labour-led government funded local authority membership in the CCP-NZ programme. Following National's election in 2008, Smith canceled the CCP-NZ programme. As with the case of the CNPS programme, the National-led government believes that the activities undertaken as part of the CCP-NZ programme should occur anyway, without a costly programme. Whether local authorities will indeed incorporate carbon measures into their Annual Plans and Long-term Community Council Plans is yet to be seen.

While climate change mitigation, and the role local authorities can play remains a point of controversy in NZ, the need to adapt to the changing climate is clear. According to NIWA

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[142] Though wind does offer a renewable alternative to fossil fuel generation, because wind towers impede the 'wild landscapes', rural communities tend to oppose their development - particularly given that the electricity generated tends to feed cities (e.g. Krumdieck, 2009). Barry & Chapman (2009) add that the realization of NZ's wind generation potential is also impeded by small investor numbers.

[143] Some local authorities do measure, manage and take actions to reduce their environmental impact, including actions to mitigate their carbon footprint, with some local authorities even taking steps to become carbon neutral. This is discussed further in the following sections.

[144] While NZ local government responsibility towards adaptation to climate change is more obvious, its role with regard to climate mitigation remains less clear, this notwithstanding the link to central government energy policy and its connection to local government.

(2008),[145] for NZ, the effects of climate change are manifested in four key trends: (1) an overall warming 0.9C over the last 100 years; (2) a general decline in frosts over most of the country; (3) a decrease of South Island glacial extent and volume, including a glacial volume decline of 11% over the last 30 years; and, (4) a rise in sea-level of 0.16m over the twentieth century.

If climate change continues unabated, NIWA (2008) expects these trends to persist, resulting in, for example, the following for NZ:[146] Mean temperature increases of 0.9C and 2.1C by 2040 and 2090 respectively, with the least warming occurring in the spring; increase in daily high temperature episodes, with substantial increase in number of days above 25C, particularly on the North Island; and, decrease in frosts and seasonal snow lying and snowfall events, with a rise in the snow line. This will result in a continual decline in glacial volume and extent. Mean rainfall will increase in variation with season, with an overall trend of drier in the east (more frequent droughts) and wetter in the west; increase in frequency of extreme rainfalls, with 1-in-100 year events expected to occur as a 1-in-50 year events by end of century. Moreover, there will be an increase in risk of severe wind, with a possible increase in storminess, which together with a sea level rise of at least 18-59cm by 2100 (from 1990) and rise in storm tide elevation, will increase frequency of heavy swells in regions exposed to prevailing westerlies.

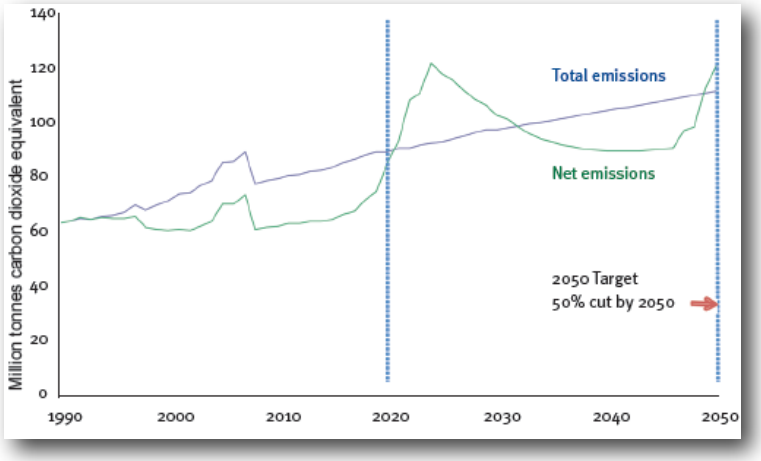
### 3.2.2. Emissions Projections and Reduction Goal

Under a business as usual scenario for 1990 - 2050, emission projections for NZ suggest a significant increase in total and net emissions (NZ Govt., 2011b) (Fig. 3.2). To combat the increase under a business as usual scenario, NZ has adopted a target of 50% emission reductions based on 1990 levels by 2050.

[145] See also MFE (2008c).

[146] This is based on mid-range projections from global climate models statistically downscaled to NZ, which follow the IPCC's Fourth Assessment approach. The full range of projections across scenarios is 0.2-2C and 0.7-5.1C for 2040 and 2090 respectively (NIWA, 2008). See Appendix, Figure 3.1, for a visual depiction of these trends.

Figure 3.2: New Zealand's total and net GHG emissions and removals, under business as usual 1990 to 2050




NZ Govt. (2011b)

NZ Govt. (2011b) suggests that this goal is in line with targets put forward by other developed countries.[147] In the shorter-term, NZ has committed to a "responsibility target" of 10-20% emissions reduction below 1990 levels by 2020. NZ Govt. (2011b) notes, however, that the 2020 target is contingent "upon an effective global agreement, including appropriate commitments by developed and developing countries, and rules relating to land use and forestry and carbon markets that are important to NZ.[148]"

When NZ joined the UNFCCC in 1992, and became a signatory to the Kyoto Protocol, it agreed to restrict its emissions to 1990 levels (61,912 Gg CO2e), on average, between 2008-2012 (Kyoto's first commitment period, CP1). This resulted in an initial assigned amount for CP1 of 309,565 Gg CO2e (309.6 Mt CO2e) (e.g. NZ Govt., 2011b; Milne et al., 2010; Milne & Grubnic, 2011).[149] According to NZ Govt. (2009a), NZ's net position during CP1 is expected to be a surplus of 9.6 million Kyoto Protocol Units (9.6 Mt CO2e). According to Milne et al. (2010), while NZ's current projection is a 9.6 Mt CO2e surplus (presently valued at NZ$215 million), this could change +/- 50 Mt COe (or, over NZ$1.1 billion). As the authors note, though NZ may be in the positive now, because of the inherent

[147] NZ Govt. (2011b) notes that NZ is "prepared to do [its] fair share towards reducing global greenhouse gas emissions." According to NZ Govt. (2011b), like NZ, Australia has committed to reduce its emissions to 50% below 1990 levels. Many other developed countries, on the other hand, have been more ambitious, with for example, Canada and Japan committing to reduce emissions by 50-65% and 55-80% below 1990 levels, respectively. According to Bebbington & Barter (2011), the government's of the UK and Scotland are the first (and so far, the only) governments to have passed legislation setting statutory emission reduction targets: 80% reduction by 2050, relative to 1990 levels.

[148] See NZ Govt. (2009b) for specific details about NZ's 2020 commitment.

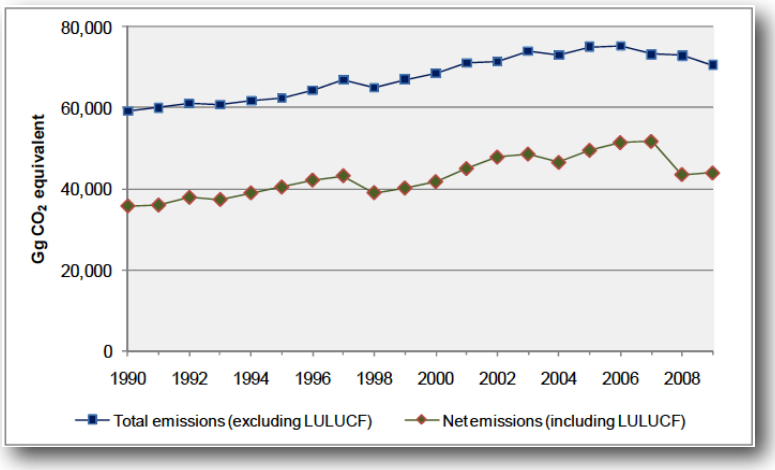
[149] While the initial assessment figure is fixed for the 2008-2012 period, emissions and removals for NZ's GHG inventory will change with scientific and methodological improvement. As a result of improved methodologies, NZ's total emissions for 1990 are presently 4.7% lower than initially calculated in 2006 (NZ Govt., 2011b).

complexity of this kind of science, NZ's prospects may change repeatedly (e.g. Milne & Grubnic, 2011; Renowden, 2007).[150]

### 3.2.3. New Zealand's GHG Emissions Profile: Current Emissions (1990 to 2009)[151]

While NZ's contribution to global GHG emissions is relatively low at 0.2%, it is ranked 11th highest in terms of emissions per capita (NZ Govt., 2011b). Moreover, emission change between 1990 (59,112 Gg CO2e) and 2009 (70,563 Gg CO2e) was significant, with total emissions[152] increasing by approximately 20% (a further 11,451 Gg CO2e, or 0.1%/ year) during that time (NZ Govt., 2011b).[153] And, net emissions[154] for the same period rose by over 23% (8,220 Gg CO2e), from 35,661 Gg CO2e in 1990 to 43,881 Gg CO2e in 2009 (NZ Govt., 2011b) (Fig. 3.3).

Figure 3.3: New Zealand's total and net emissions (under the Climate Change Convention) from 1990 to 2009




NZ Govt. (2011c)

As a proportion of GHG gas emitted, NZ's profile has changed since 1990, when CH4 and CO2 contributed equally to total emissions, with approximately 25,000 Gg CO2e (or 43%)

[150] As Milne et al. (2010, p. 27) indicate, NZ's GHG emission measurements are in reality only acceptable estimates: "acceptable because they have been subject to review and audit and agreed upon, but nonetheless estimates." The authors go on the emphasize that emissions accounting is "part science, part modeling, part guesswork and part negotiation."

[151] Data for this section was derived from New Zealand's Greenhouse Gas Inventory, which is an annual report of all anthropogenic emissions and removals in NZ, specifically for the period of 1990 to 2009.

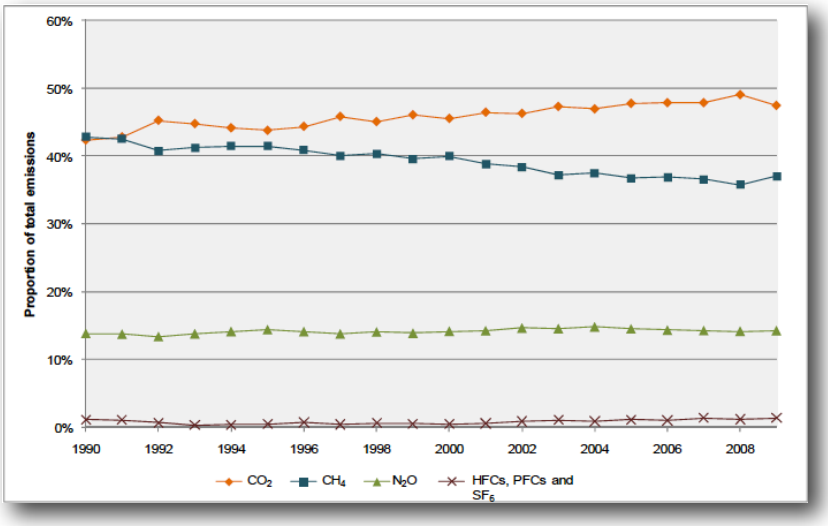
[152] Total emissions include those from energy, industrial processes, solvent and other product use, agriculture and waste sectors. This does not include the LULUCF sector.

[153] While the overall trend shows an increase in total emissions, between 2008 and 2009 NZ's total GHG emissions decreased by 2,281 Gg CO2e. This, according to NZ Govt. (2011c) is the result of a decrease in road transport emissions (downturn of global economy) and a decrease in emissions associated with thermal energy generation (more hydro-electric, wind and geothermal generation). As explained in Milne & Grubnic (2011), the modest reduction in gross emissions are likely to rebound, given their association with climate and global economic variation as opposed to changes in policy-induced behaviours.

[154] Net emissions include those from energy, industrial processes, solvent and other product use, agriculture and waste sectors, and emissions and removals from the land use and land use change and forestry (LULUCF) sector.

each (Fig. 3.4).[155] In 2009, however, CO2 dominated the country's emission profile, with over 33,400 Gg CO2e, a 33.8% increase from 1990; CH4, on the other hand, provided just over 26,100 Gg CO2e, representing a 3.3% increase from 1990.[156]

Figure 3.4: Proportion that gases contribute to New Zealand's total emissions from1990 to 2009




NZ Govt. (2011c). CO2, CH4 and N2O values exclude emissions and removals from LULUCF.

When considered as a function of sector contribution, the agriculture and energy sectors provided the greatest proportion of emissions in both 1990 and 2009.[157] While the agriculture sector contributed the largest percentage of emissions in both 1990 and 2009 (51% and 46%, respectively),[158] its share of emissions has generally been in decline since 1990. The relative amount of emissions from the energy sector, however, has been increasing over the same period, with 40% in 1990 and 44% in 2009 (NZ Govt., 2011b) (Fig. 3.6).[159] The growth in energy related emissions, according to NZ Govt. (2011c), is the result of a 66% increase in transport emissions (4931 Gg CO2e) and a 72% increase in electricity generation and heat production emissions (2494 Gg CO2e). Notwithstanding the energy sector's increasing contribution to total emissions between 1990 and 2009, between 2008 and 2009 the sector did experience a decrease of 2245 Gg CO2e. As noted previously, this slight aberration was the

[155] See Appendix, Table 3.3, for data set; and Figure 3.5, for a graphic illustration of total emissions by gas in 2009.

[156] This shift is the result of increased emissions from the energy sector (NZ Govt., 2011b).

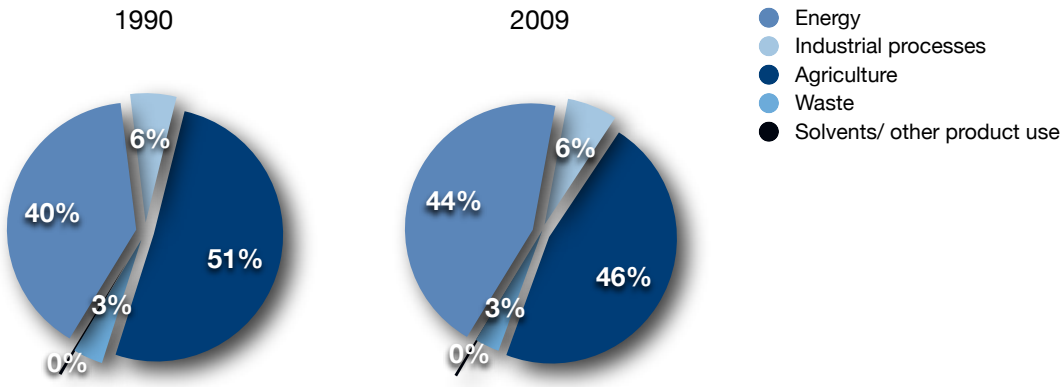
[157] See Appendix, Table 3.4, for data set.

[158] The agriculture sector's dominance of NZ's emissions profile is unique among developed countries, where the sector typically represents less than 10% of total emissions (NZ Govt., 2011b). While as a proportion the agriculture sector's contribution may be in decline, by weight it continues to increase. This increase is largely the result of enteric fermentation emissions from dairy cattle and N2O emissions from agricultural soils (NZ Govt., 2011b). Interestingly, over the last two decades NZ's energy use per capita has been increasing, also a trend that sets it apart from most of the developed world, where per capita energy use has been decreasing (Renowden, 2007).

[159] See also Appendix, Figure 3.7, for a longitudinal graphic representation.

result of an increased contribution of hydro electric power, wind, and geothermal generation to the national grid, as well as a reduction in transportation related emissions (the result of a downturn in the economy) (e.g. Milne & Grubnic, 2011).

Figure 3.6: Proportion that sectors contribute to New Zealand's emissions, 1990 to 2009[160]




Emission removals from the LULUCF sector have increased since 1990, with net removals (under the Climate Change Convention) in 2009 of -26,682 Gg CO2e, representing a 13% increase from 1990 (Fig. 3.8).[161] According to NZ Govt. (2011c), the increase in emission removals is the result of new forest establishment since 1990 (post-1989 forests), and the growth of pre-1990 planted forests.[162] While the overall trend demonstrates increased emission removals from the LULUCF sector, the 2008-2009 period, however, experienced a slight decline of 9%. This is due in part to an increase in the harvesting of pre-1990 planted forests and increased new planting (NZ Govt., 2011b).[163]

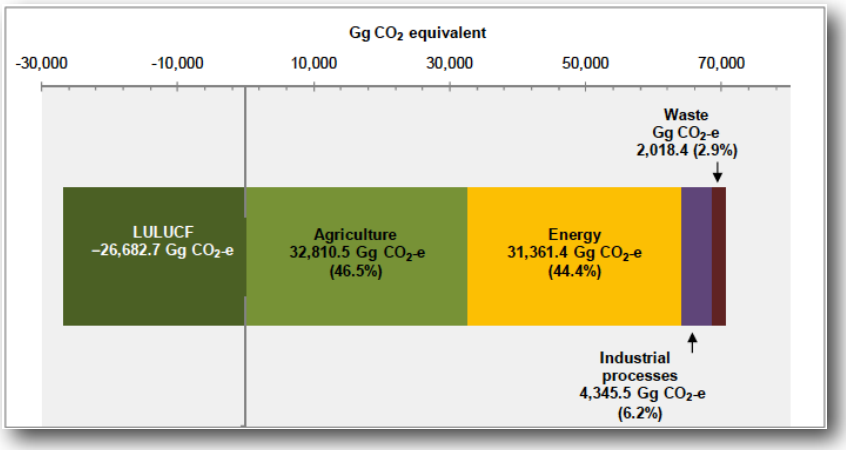
[160] Adapted from Table ES 4.1.1, NZ Govt. (2011c). This figure does not include LULUCF.

[161] See also Appendix, Figure 3.9, for a longitudinal graphic representation.

[162] As per international rules, forests planted after 1990 can receive credit for their growth, but will debited upon harvest. When pre-1990 forests are cleared and not replanted they are also liable for debit.

[163] According to NZ Govt. (2011c), new planting caused a decrease in removals because "the biomass of the previous crop is greater than the growth of the new crop, meaning emissions are greater than removals during 2009".

Figure 3.8: New Zealand's emissions and removals by sector in 2009




NZ Govt. (2011c). Note, emissions from the solvent and other product use sector are not represented in this figure. Net removals from the LULUCF sector are as reported under the Climate Change Convention.

## 3.3. THE CNPS PROGRAMME

### 3.3.1. Programme Overview

Notwithstanding that the primary goal of the CNPS programme was to launch NZ into the vanguard of the international effort on climate change and carbon neutrality,[164] the initiative also sought to demonstrate to organizations (both public and private) the practical methodology for achieving carbon neutrality. The government understood that in order to encourage businesses and households to reduce their carbon footprint, it must do the same and demonstrate commitment to lowering its own footprint within its operations (NZ Govt., 2007b; Clark, 2007c).[165]

The delivery of the CNPS programme employed a staged approach to achieving carbon neutrality. And, it was acknowledged that the first stages of the programme would be iterative, learning by doing (NZ Govt., 2007b). While the six lead-core departments were tasked with developing plans to reach carbon neutrality by the end of 2012 (for the period of 2006/ 07 - 2011/ 12 financial year) by February 2008, the remaining core 28 departments were only required to develop emission reduction plans by the same date, and expected to be well on their way to achieving carbon neutrality by 2012. In addition, the core 28

[164] A year into the CNPS, the NZ government continued to advocate the programme's status as an international leader on public sector carbon neutrality (NZ Govt., 2008).

[165] It is important to note that the CNPS initiative was developed from a sustainability perspective, rather than a policy tool for achieving NZ's commitment under the Kyoto Protocol. With that said, offsets associated with the programme were intended to be Kyoto compliant: "We expect that Kyoto-compliant options will be preferred in the first instance because they help New Zealand meet its emission targets for the First Commitment Period under the Kyoto Protocol, and are more likely to align with broader climate change policy. One major criticism of non-Kyoto options is that they do not lessen our Kyoto liability, and therefore the government effectively pays twice to offset the emissions" (NZ Govt., 2007b).

departments were not required to design offset plans in the near term, or to offset all emissions from 2006/ 07 - 2011/ 12 (NZ Govt., 2007b). While the core departments were mandated to go carbon neutral, the wider state sector, including Crown entities, schools and district health boards, for example, was only encouraged to undertake efforts to cut emissions.[166]

The six lead-core departments include the Department for Conservation, Inland Review Department, Ministry for Economic Development, Ministry for the Environment, Ministry of Health, and the Treasury. These ministries were chosen to lead the programme because good information already existed regarding their energy and transport use (emissions reductions efforts were built on the existing work of the Govt$^3$ programme[167] and the Energy Efficiency and Conservation Authority), and the fact they were a good representative cross-section of core government agencies (NZ Govt., 2007b).

The Ministry for the Environment, serving as lead agency for the programme, was responsible for:

- Providing the departments with an inventory methodology;
- Managing measurement methods (including emission factors) and reporting formats;
- Managing independent verification of inventories;
- Providing advice on development of emission reduction plans and reduction targets;
- Developing an offset portfolio and establishing an administrative process for the management and verification of offsets.

For their part, the core departments were responsible for gathering emission data, disclosing these measures publicly, and identifying and implementing emission reduction activities and reduction plans (NZ Govt., 2007b). While the programme was largely self-reporting, based on annual reporting of emissions and reduction targets, the Ministry for the Environment was ultimately responsible for reporting progress across all 34 core departments (NZ Govt., 2007b).

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[166] It was expected that following an assessment of the experience of the core departments, the broader state sector would also embark on a path to achieve carbon neutrality (NZ Govt., 2007b).

[167] The Govt$^3$ programme was a Ministry for the Environment-led initiative designed to change government agency behaviour and practices around sustainable procurement and energy efficiency. See: http://www.mfe.govt.nz/issues/sustainable-industry/govt3/.

**Programme Funding**

The budget for the CNPS programme was $10.4 million gross over three years. This sum included funding for energy audits and travel plans for the 34 core departments, and the offset portfolio for the 2006/ 07 - 2011/ 12 emissions from the six lead-core departments (NZ Govt., 2007b).[168] The offset portfolio of the remaining 28 core departments, however, was not included in the $10.4 million, and government officials were in the process of determining whether costs should be met by respective departments' baseline budget, or a further Budget bid. Likewise funding for the six lead-core departments' offset portfolio beyond 2012 was also in discussion (NZ Govt., 2008). In terms of reduction measures for the 34 core departments, while it was expected that financial savings would result overtime, it was anticipated that departments would be required to absorbed some costs in the short to medium term (NZ Govt., 2007b).

**Approach - Steps to Carbon Neutrality**

The CNPS programme's approach for completing the emissions inventory was consistent with those employed by, for example, the World Resource Institute (WRI), the World Business Council for Sustainable Development (WBCSD), the New Zealand Business Council for Sustainable Development, and the Landcare Research CarboNZero programme (NZ Govt., 2007b).[169] The programme operated within the guidelines of the Greenhouse Gas Protocol for achieving carbon neutrality, with inventories compliant to ISO specifications (NZ Govt., 2008; Mason & Ball, 2008).[170]

Under the CNPS programme, there were three key steps to achieve carbon neutrality:[171] (1) measure emissions; (2) reduce emissions; and, (3) offset the remaining emissions. For the first step, agencies were required to compile an accurate inventory that accounts for the greenhouse gas emissions associated with energy and electricity use, business travel and

[168] The $10.4 million did not include the expected savings generated from energy efficiencies. It was expected that the investment in emission reduction measures would be repaid overtime via reduced energy bills and a reduced need for offsets (NZ Govt., 2007b).

[169] While the reporting methodology of these organizations remain very similar, emissions associated with waste disposal tend not to be included. The CNPS programme, however, in an effort to ensure credibility, did included emissions resulting from waste to landfill (NZ Govt., 2007b); with that said, emissions resulting from the waste sector are quite small, representing between 1-2% for the lead-core agencies between the 2006 - 2007 period (Fig. 3.20).

[170] Compliant to ISO 14064-1 (ISO, 2006). The Greenhouse Gas Protocol is an international emissions accounting framework, used by both public and private sector.

[171] MFE (2008a) provides a good overview of how to achieve carbon neutrality.

transport (including air travel), and waste sent to landfill.[172] NZ Govt. (2007b) notes that department inventories did not include staff commuting or the embodied energy in buildings and products.[173] The data, as Mason & Ball (2008) indicate, was presented in carbon dioxide equivalents (CO2e) and organised around three "Scope" categories, as per ISO specifications:

> Scope 1 - Direct Emissions
> Emissions associated with on-site production or combustion of fossil fuels, including purchased fuel for vehicle fleet;
>
> Scope 2 - Indirect Emissions
> Emissions associated with purchased electricity, i.e. emissions created through the consumption of electricity to light and power buildings;
>
> Scope 3 - Optional
> Typically includes emissions associated with business travel (inc. air travel, taxis), outsourced services, and employee commuting, for example.

Step two required departments to identify, conceptualise, and, building on their experience with the Govt$^3$ programme, implement practices and programmes to reduce emissions. Departments were expected to reduce their emissions as much as practical, within the "bounds of reasonableness and cost-effectiveness" (NZ Govt., 2007b).[174] Departments were cautioned not to undertake emission reduction efforts that would hinder their effectiveness. Reduction efforts focused on three areas: energy efficiency, including energy audits and staff awareness building; travel, including the development of travel plans, instalment of videoconferencing, and procurement of fuel efficient vehicles; and, waste reduction and recycling.[175] Departments were encouraged to find "win-win' options that resulted in both cost and emissions savings relative to business as usual.[176] In addition, departments were required to set realistic emission reduction targets. Given that departments were starting from different base-points, the government did not believe it appropriate to set a flat-rate target across the departments (NZ Govt., 2007b).

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[172] As Ball et al. (2009a) note, in line with international standards, see ISO (2006), departments set operational boundaries, identified emission sources and calculated their CO2e, and reported verified inventories.

[173] According to NZ Govt. (2007b), while CNPS did not capture staff commuting, building construction, and procurement, for the most part, this was achieved through the Govt$^3$ programme and the sustainable government procurement initiative.

[174] Departments were not expected to reduce their emissions to zero, as it would not have been practical with current technology (NZ Govt., 2007b).

[175] The Ministry for the Environment provided departments with a guideline for these measures, but this document is not publicly available.

[176] The Ministry for the Environment was charged with developing a "cost-effective threshold" to assist department's in determining the most appropriate emission reduction measure (NZ Govt., 2007b). The government recognized that "not all potential reduction measures [would] save money..." and while "emissions reduction [was] the main focus of the initiative... there is point at which reduction ceases to be the best option and offsetting becomes preferable" (NZ Govt., 2007b).

The final stage for achieving carbon neutrality involved offsetting. As noted above, since it is not practical - and in some cases not technologically possible - to reduce emissions to zero, the remaining unavoidable emissions required offsetting. The task of investigating offset options for the lead-core departments was centralised, and assigned to the Ministry for the Environment.[177] While it was accepted that all offset projects be located in NZ, with preference for forestry-related projects on Department of Conservation land (NZ Govt., 2007b), some debate did surround the offset portfolio itself. Cabinet ultimately recommended that the lead-core department offset portfolio include the following kyoto-compliant offsets:

- Exotic afforestation on Crown land;
- Indigenous afforestation on Crown land through new planting; and,
- Indigenous afforestation on Crown land by accelerated natural regeneration.

The Ministry for the Environment emphasised the need to focus on accelerated indigenous forest reversion on Crown land, as there was real capacity for ecological co-benefits and exposure to gain public support. Moreover, this approach aligned with biodiversity goals, and was not limited by seed stock and seeding availability (NZ Govt., 2007c). The quality of the offset was an important consideration given the programmes need to maintain credibility.[178] It was estimated by government that emissions associated with the lead-core departments could be offset by the end of 2012 "through the reversion of indigenous forest on between 10,000 and 27,000 hectares" of Department of Conservation land (NZ Govt., 2007b).[179] In addition to the three offset options noted above, the offset portfolio for the remaining 28 core departments included the following:

- Permanent Forest Sink Initiative (PFSI) and Afforestation Grant Scheme (AGS);[180]
- Non-kyoto forest management; and,
- Other industrial projects, i.e. energy efficiency measures.

A diversified portfolio was crucial for all 34 core departments, as it allowed Government to minimise risk associated with any one specific activity, and particularly for the core 28

[177] The Ministry for the Environment sought the most environmentally appropriate and cost effective offsetting options.

[178] The CNPS programme was required to be accurate, transparent and auditable, in order "to demonstrate the retirement of the credits or offsets used" in the programme (NZ Govt., 2007c).

[179] It was estimated by government that Department of Conservation had at least 50,000 hectares of land suitable and available for offset needs (NZ Govt., 2007b).

[180] It was anticipated that these two programmes would be in place by the time the remaining 28 lead departments were ready for offset projects. PFSI "promotes the establishment of permanent forests on previously unforested land... the forest must be direct human induced... through planting, seeding and/or the human-induced promotion of natural seed sources" (MAF, 2011a). AGS was a funding scheme put in place to encourage new forests, as part of the government's package of climate change initiatives. No new application rounds are planned (MAF, 2011b).

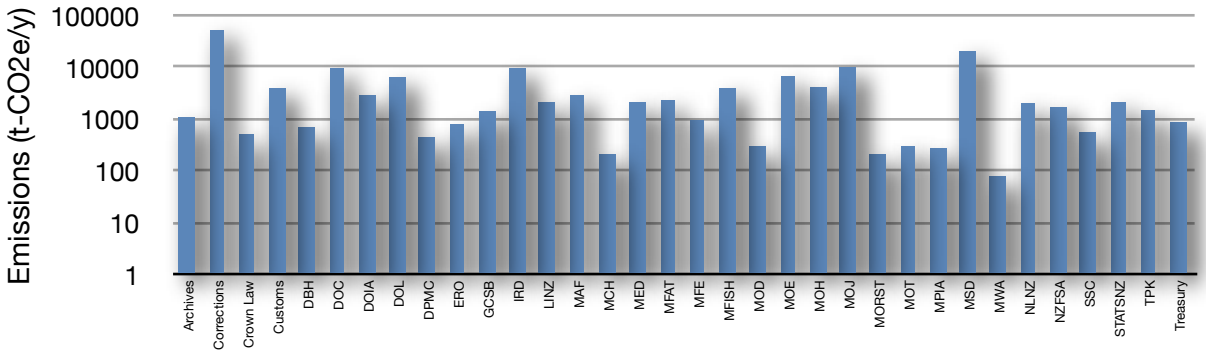
departments, given their delayed timeline, it maximised opportunities for learning (NZ Govt., 2007c).

### 3.3.2. Programme Results

**Emission Inventory Data for the 34 Core Departments**[181]

All 34 core departments completed an emissions inventory for the 2006/ 07 financial year.[182] Total emissions for the 34 core departments was approximately 159,000 t-CO2e, with the six lead-core departments responsible for approximately 26,000 t-CO2e (16%)[183] and the remaining 28 core departments responsible for approximately 133,000 t-CO2e (84%) (NZ Govt., 2008).[184] Initial assessment of all 34 core department inventories reveals a range of emission levels or weights, from a low of 76.77 t-CO2e/y (the Ministry of Women's Affairs) to a high of 9511.24 t-CO2e/y (the Department of Conservation) (Fig. 3.10).

Figure 3.10: Emissions by weights (t-CO2e/y) for all 34 core departments for base-year July 1, 2006 to June 30, 2007[185]




When viewed as function of full-time equivalent (FTE) staff, emissions range from a low of 1.69 t-CO2e/FTE/y (the Inland Revenue Department) to a high of 9.51 t-CO2e/FTE/y (Archives New Zealand), with an average of 3.56 t-CO2e/FTE/y over all 34 core departments. In addition to Archives New Zealand,[186] the Ministry of Fisheries and the

[181] See Appendix, Table 3.5, for data set.

[182] Emission inventories and reduction plans for the 34 core departments were obtained from the respective department's website between June and September 2009.

[183] Det Norske Veritas verified the inventories of the lead-core six departments.

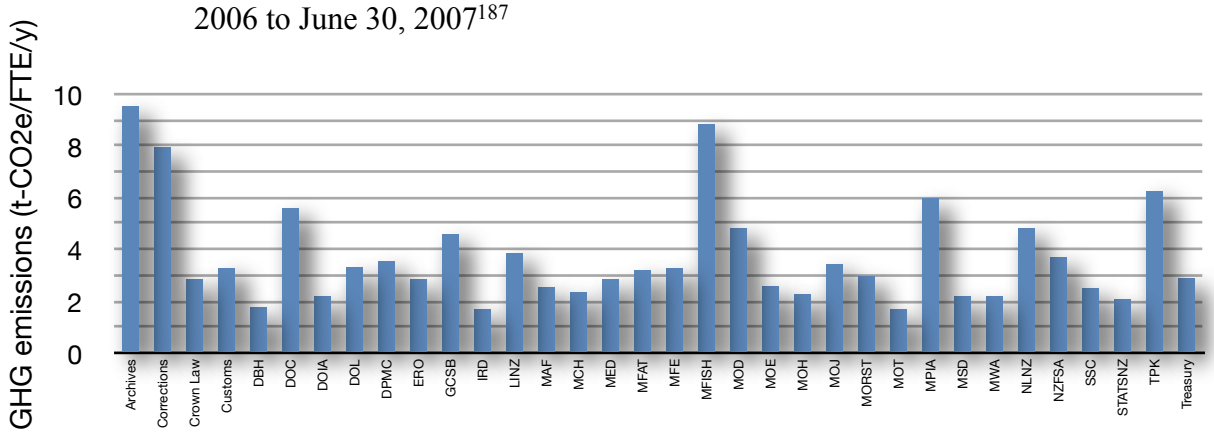
[184] The six lead-core departments represent 17% of the total core departments involved in the programme, the remaining 28 core departments thus representing 83%. Figures released in NZ Govt. (2008) are approximations, with more accurate numbers presented in respective Department Emission Inventory Reports, which when tallied indicate that emissions for the six lead-core departments was 26,731.1 t-CO2e, the 28 core departments was 126,440.59 CO2e, and the total for both groups was 153,171.68 CO2e for 2006/ 07 financial year. For accuracy, the following tables and figures use data directly derived from the actual department emission inventories.

[185] See Appendix, Table 3.5, for data set.

[186] Archives New Zealand, for example, has a high t-CO2e/FTE/y because of a low number of FTE relative to energy use (Scope 1 and Scope 2).

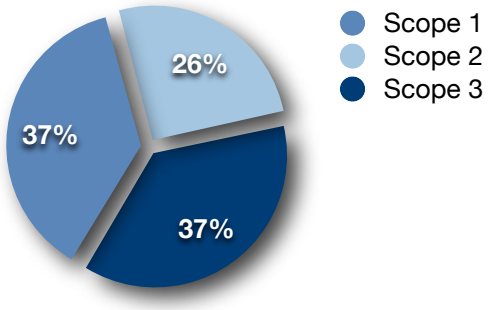
Department of Corrections also presented high figures for emissions per FTE/y with 8.81 t-CO2e and 7.93 t-CO2e, respectively (Fig. 3.11).

Figure 3.11: Emissions per FTE for all 34 core departments for base-year July 1, 2006 to June 30, 2007[187]




When considered by scope for all 34 core departments, Scope 1 and Scope 3 dominate the emission profile, representing 37% each by proportion (57042.41 t-CO2e and 56706.44 t-CO2e, respectively) (Fig. 3.12).

Figure 3.12: Emission proportions by scope for combined emissions of all 34 core departments for base-year July 1, 2006 to June 30, 2007[188]




On an individual level, the dominant scope ranges across the 34 core departments, with the Department of Corrections' emission profile dominated by Scope 1 (73%; 37980 t-CO2e), the Ministry of Justice's emission profile dominated by Scope 2 (50%; 4914.9 t-CO2e), and the Ministry of Foreign Affairs and Trade's emissions profile dominated by Scope 3 (99.7%; 2251.86 t-CO2e). The Inland Revenue Department and the Ministry of Economic Development both are close behind for Scope 2 at 49.7% (4676.44 t-CO2e) and 49.3%

[187] See Appendix, Table 3.5, for data set.

[188] See Appendix, Table 3.6, for data set.

(106.95 t-CO2e), respectively. The Ministry of Health is close behind for Scope 3 at 89.7% (3607.79 t-CO2e) (Fig. 3.13). In terms of total emission weights, the Department of Corrections is the largest contributor to Scope 1 with 37980 t-CO2e, the Inland Revenue Department is the largest contributor to Scope 2 with 4676.44 t-CO2e, and the Department of Conservation is the largest contributor to Scope 3 with 4203.87 t-CO2e.

Figure 3.13: Emission proportions by scope for each of the 34 core departments for base-year July 1, 2006 to June 30, 2007

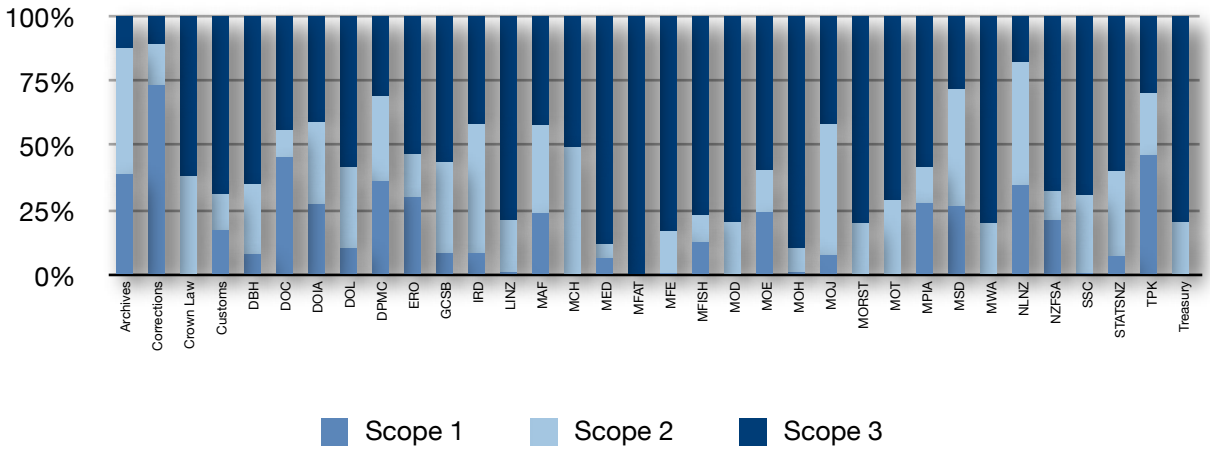
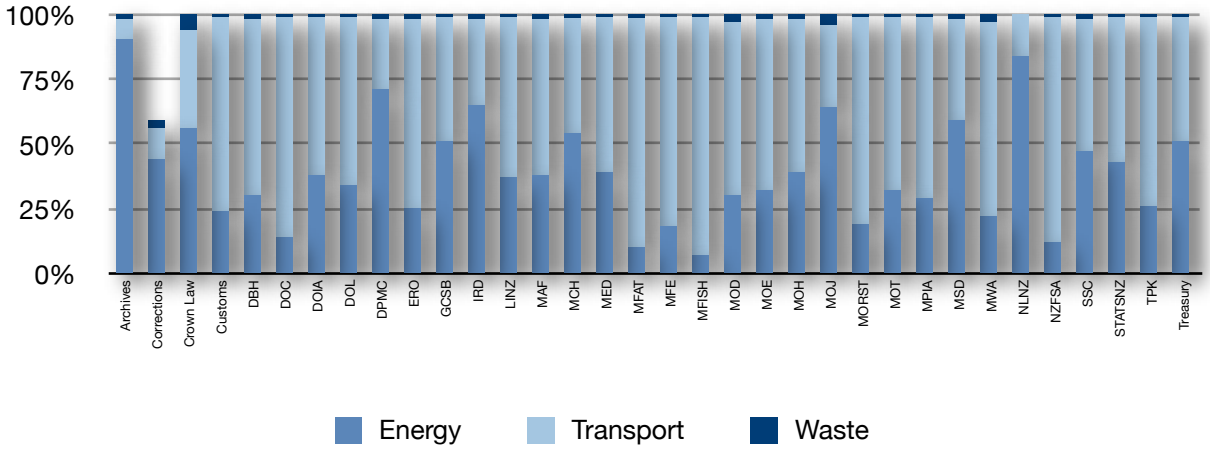



Figure 3.14 presents department emission proportions by source (Fig. 3.14). Energy and transport are the primary contributors to department emissions, with waste representing only a fraction of the total at 1-2%, on average across the 34 core departments. The Crown Law Office and the Ministry of Justice stand out as exceptions to this trend with waste responsible for approximately 6% and 4% of their department's total emissions, respectively. Notably, though not illustrated in this figure, the Department of Corrections has added a fourth emission source to its profile, Livestock,[189] which represents approximately 41% of the departments' emissions.

[189] Livestock, in the form of CH4 (21,540 t-CO2e), represents a significant proportion of the Department of Correction's emissions, and while classed as Scope 1 emissions (Fig. 3.13), it is not included in Figure 3.14 because it does not fall into one of the three primary sources of emissions (Corrections, 2007).

Figure 3.14: Emission proportions by source for each of the 34 core departments for base-year July 1, 2006 to June 30, 2007[190]

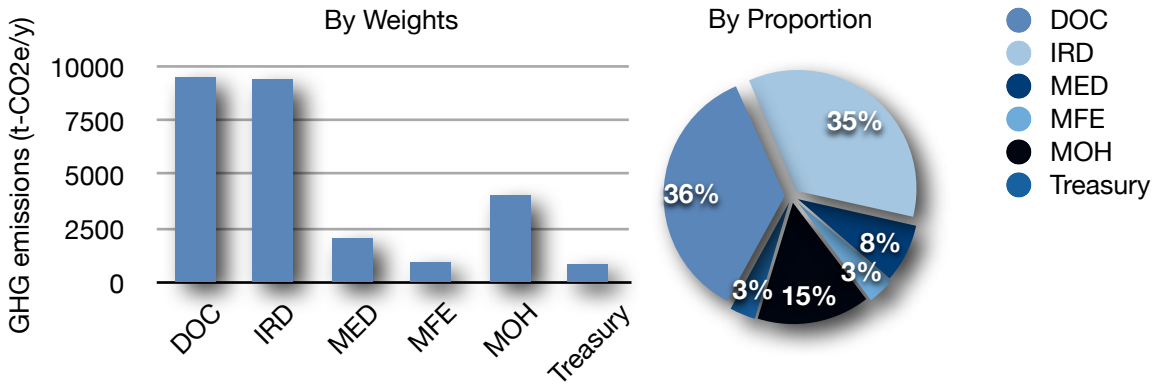



**Emission Inventory Data for the Six Lead-core Departments**

In line with the results from the 34 core department emission inventories, analysis of the lead-core six department inventories reveals a range of emission levels or weights, from a low of 847.14 t-CO2e (the Treasury) to a high of 9511.24 t-CO2e (the Department of Conservation) (Fig. 3.15). The Ministry for the Environment also demonstrates a relatively low emission weight at 912.29 t-CO2e, and the Inland Revenue Department a relatively high emission weight at 9405.06 t-CO2e. As function of the proportion of the lead-core six department's total emission weight, the Department of Conservation represents 36% (9511.24 t-CO2e), the Inland Revenue Department 35% (9405.06 t-CO2e), the Ministry of Health 15% (4017.73 t-CO2e), the Ministry of Economic Development 8% (2037.63 t-CO2e), and the Treasury and Ministry for the Environment approximately 3% each, at 847.1428 t-CO2e and 912.29 t-CO2e, respectively.

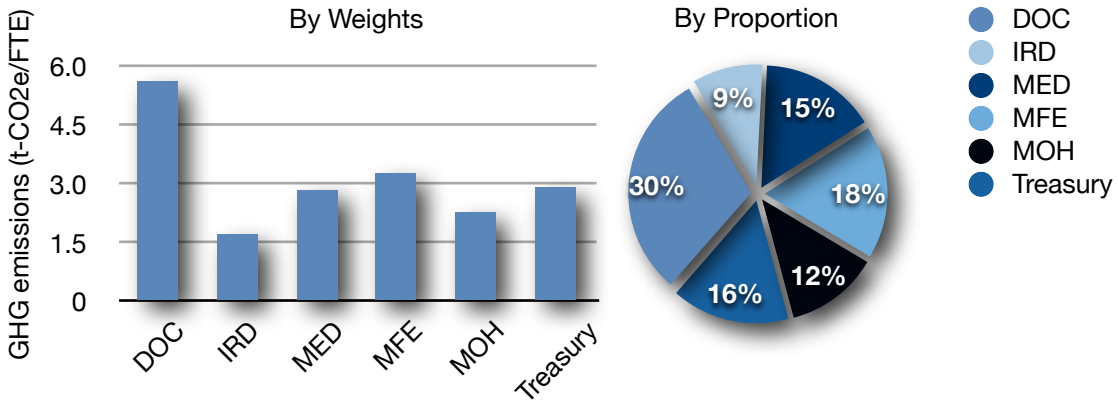
[190] See Appendix, Table 3.5, for data set.

Figure 3.15: Emissions for the six lead-core departments for base-year July 1, 2006 to June 30, 2007[191]




When viewed as function of full-time equivalent (FTE) staff, emissions for the lead-core six departments range from a low of 1.69 t-CO2e (the Inland Revenue Department) to a high of 5.59 t-CO2e (Department of Conservation), with an average of 2.58 t-CO2e over the six lead-core departments (Fig. 3.16), a reduction of 0.98 t-CO2e from the FTE of the 34 core departments (3.56 t-CO2e). By proportion per FTE across the lead-core six departments, the Department of Conservation represents 30% (5.59 t-CO2e), Ministry for the Environment 18% (3.25 t-CO2e), Treasury 16% (2.88 t-CO2e), the Ministry of Economic Development 15% (2.81 t-CO2e), the Ministry of Health 12% (2.25 t-CO2e), and the Inland Revenue Department 9% (1.69 t-CO2e).

Figure 3.16: Emissions per FTE for the six lead-core departments for base-year July 1, 2006 to June 30, 2007[192]

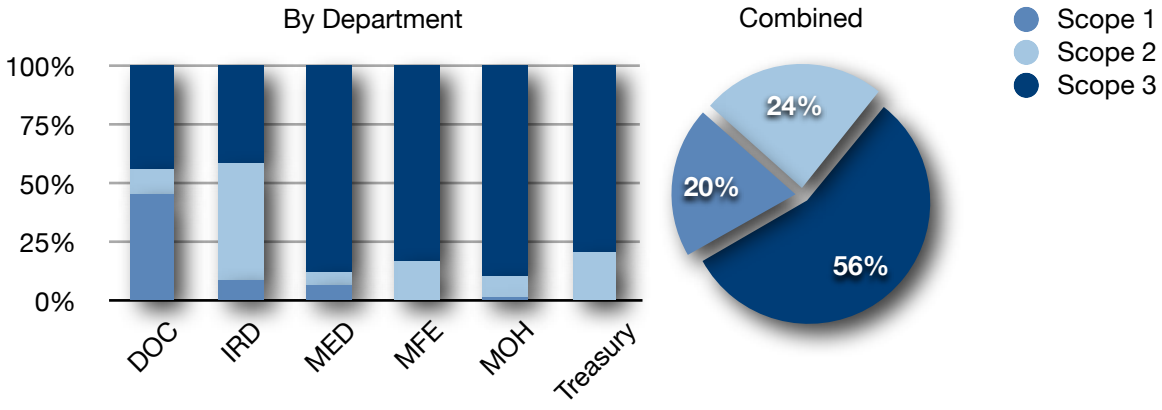



[191] See Appendix, Table 3.7, for data set.

[192] See Appendix, Table 3.7, for data set.

When viewed by scope, Scope 3, at 56% (14980.70 t-CO2e), dominants the total emission profile for the six lead-core departments, with Scope 2 at 24% (6474.72 t-CO2e) and Scope 1 at 20% (5275.66 t-CO2e) (Fig. 3.17). Within the six lead-core departments, Scope 3 remains the dominant scope for the Ministry of Health at 89% (3607.79 t-CO2e), the Ministry of Economic Development at 88% (1798.59 t-CO2e), Ministry for the Environment at 83% (759.79 t-CO2e), and the Treasury at 79% (675.29 t-CO2e), while Scope 2 is the dominant scope for the Inland Revenue Department at 50% (4676.44 t-CO2e), and Scope 1 and Scope 2 equally dominate the Department of Conservation's emission profile at 45% (4303.1 t-CO2e) and 44% (4203.8 t-CO2e), respectively. In terms of total emission weights, the Department of Conservation is the largest contributor to Scope 1 with 4303.1 t-CO2e and Scope 3 with 4203.87 t-CO2e, and consistent with results for all 34 core departments, the Inland Revenue Department is the largest contributor to Scope 2 with 4676.44 t-CO2e.

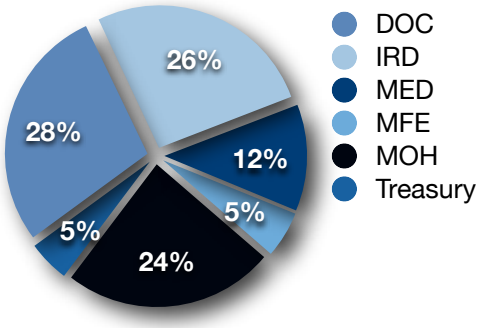
Figure 3.17: Emission proportions by scope for the six lead-core departments for base-year July 1, 2006 to June 30, 2007[193]




A closer look at the Scope 3 contributions of the six lead-core departments, shows that of the total 14980.7 t-CO2e, the Department of Conservation contributes the greatest emissions at 28% (4203.87 t-CO2e) while the Ministry for the Environment and the Treasury supply the fewest emissions at 5% each (759.44 t-CO2e and 675.29 t-CO2e, respectively) (Fig. 3.18).

[193] See Appendix, Table 3.8, for data set.

Figure 3.18: Lead-core department contribution to scope 3 by proportion for base-year July 1, 2006 to June 30, 2007[194]




The six lead-core departments organise Scope 3 emissions by three sources, or categories: Energy, Transport and Waste. Figure 3.19 illustrates that for the six lead-core departments, transport, with 11262.6 t-CO2e, is the dominant source of Scope 3 emissions, followed by energy with 3442.9 t-CO2e, then waste with 274.7 t-CO2e (Fig. 3.19). Figure 3.19 also shows the relative contribution of each of the six lead-core departments to the three categories. The Ministry of Health dominates Energy with a 35% (1214.74 t-CO2e) contribution, while the Department of Conservation dominates Transport with a 36% (4073.72 t-CO2e) contribution and the Inland Revenue Department dominates Waste with a 55% (151.55 t-CO2e) contribution.

[194] See Appendix, Table 3.9, for data set.

Figure 3.19: Lead-core department contribution to Scope 3 emission sources by proportion for base-year July 1, 2006 to June 30, 2007[195]

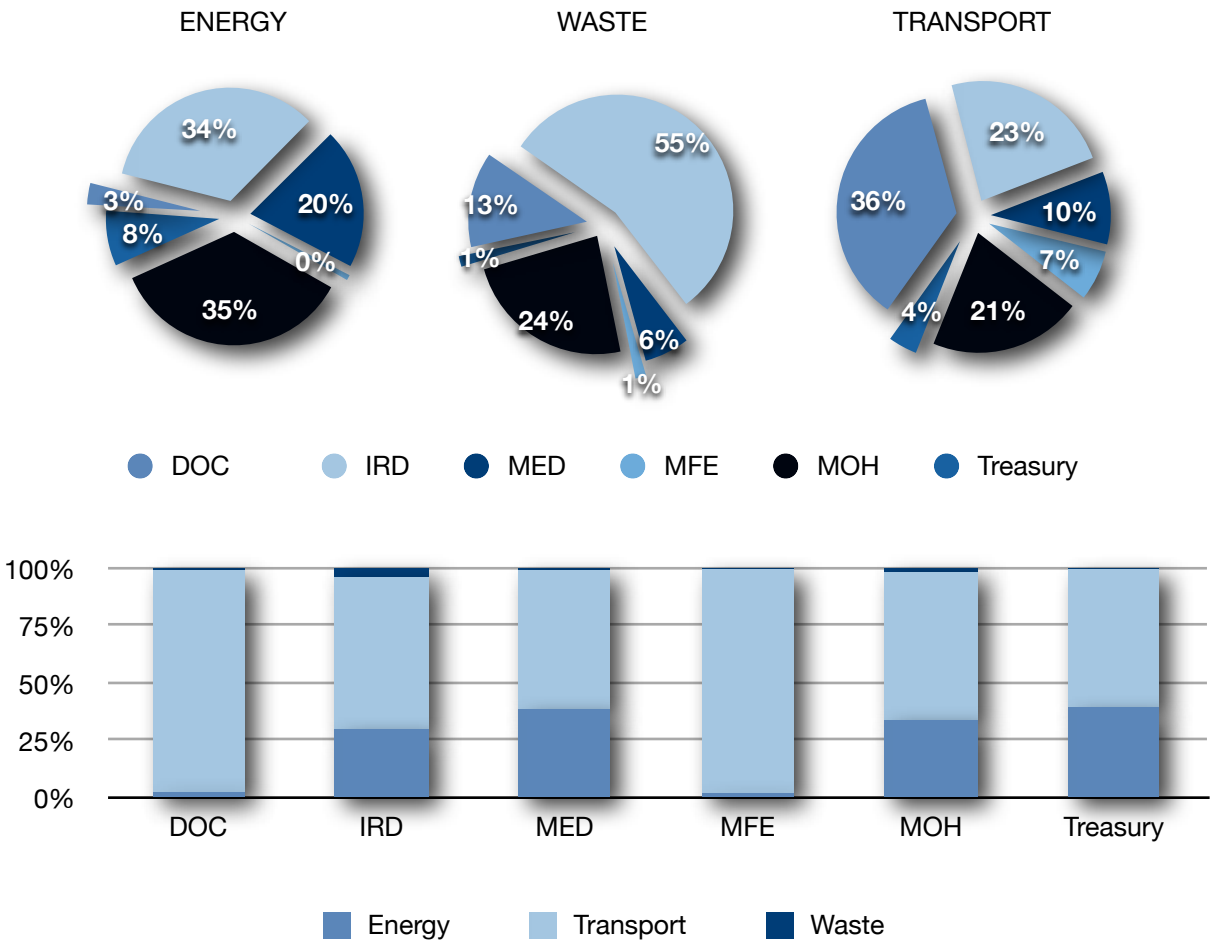
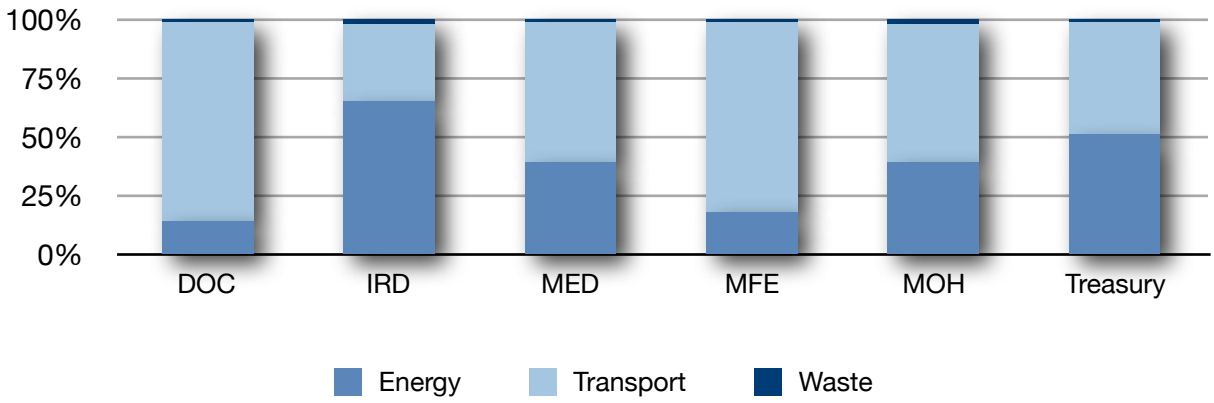



Figure 3.20 presents department emission proportions by source (Fig. 3.20). Similar to the trend found within the 34 core departments, energy and transport are the primary contributing source to department emissions, with waste representing only a fraction of the total at 1-2%, on average across the six lead-core departments.

[195] See Appendix, Table 3.9, for data set.

Figure 3.20: Emission proportions by source for each of the six lead-core departments for base-year July 1, 2006 to June 30, 2007[196]




**Emission Reductions**

The 34 core departments identified over 300 reduction projects to lower emissions below business as usual (NZ Govt., 2008). The initiatives ranged from the development of video conferencing facilities and installation of solar hot water heaters to vehicle fleet auditing and sustainability programmes for vehicle procurement, and recycling. It was expected that further reduction projects would be identified as departments completed their energy audits and travel plans. In terms of emission reduction targets, as Ball et al. (2009a) indicate, department goals were presented in a combination of qualitative and quantitative measures.

This trend is echoed within the lead-core six department Emission Reduction Plans, where, for example, the Department of Conservation and the Ministry of Economic Development present emission reduction targets by weight, 1837 t-CO2e (19%) and 270 t-CO2e (13%) respectively, by 2012, and the Ministry of Health and the Treasury present descriptive qualitative targets. While all six lead-core departments provide qualitative targets (including language that suggests need for behaviour change i.e. awareness building) in the their plans,[197] only 5 departments provide quantitative targets. Emission reduction targets are organised around three areas of focus: energy, transport and waste. Table 3.10 describes, generally, the key targets pledged by the six lead-core department (Table 3.10).

[196] See Appendix, Table 3.9, for data set.

[197] Departments consistently advocate for energy audits, travel planning and waste/ recycling audits.

Table 3.10: Lead-core departments' emission reduction targets

| Department* | Emission reduction targets** | | | |
|---|---|---|---|---|
| | Overall Goal | Energy | Transport | Waste |
| DOC | • total emission savings of up to 1837 t-CO2e (19%) | • reduce electricity use by 15% (150 t-CO2e)<br>• reduce oil use in generators by 50% (76 t-CO2e) | • reduce vehicle emissions by approximately 33% (1300 t-CO2e)<br>• reduce air travel by 15% (150 t-CO2e)<br>• reduce helicopter use by 5% (140 t-CO2e) | |
| IRD | | • reduce energy use by 10% per FTE | • aim to reduce workplace travel distance by 15% (by 2010)<br>• work to reduce business travel, including a 10% reduction in air travel distance (by 2010)<br>• reduce emissions from vehicle fleet by 25%, and a 10% reduction in emissions from taxis and rental vehicles (by 2008) | • work to reduce waste to landfill |
| MED | • total emission savings of up to 270 t-CO2e (13%) | • reduce overall energy use by 10% | • reduce overall number of international activities (flights) by 15% | • reduce overall waste to 15 kg or less per FTE/ y. |
| MFE | | • reduce electricity consumption per FTE by 5% (2008) | • reduce emission associated with workplace travel by 6% (2008) | • reduce total waste |
| MOH | | • reduce energy use | • reduce air travel distance<br>• reduce taxi travel distance | • reduce waste to landfill |
| Treasury | | • reduce electricity used by personal computer stock by 50% | | |

This table was constructed using data from New Zealand Ministry Emission Reduction Plans. * See Appendix, Table 3.1, for list of Ministry/ Department abbreviations. ** Source: Respective Ministry/ Department Emission Reduction Plan (2008)

## 3.4. THE CCP-NZ PROGRAMME

### 3.4.1. Programme Overview

The CCP-NZ programme began in 2004, with funding from the Ministry for the Environment, support from the Energy Efficiency and Conservation Authority and Local Government New Zealand, and operational guidance from ICLEI, through its Oceania Secretariat. As a voluntary initiative, local government participation in the CCP-NZ programme was not mandated by central government.

Building on ICLEI's success with the CCP campaign, the goal of the CCP-NZ programme was to help local government councils achieve quantifiable GHG emission reductions,[198] both from within councils' own operations (corporate) and from within its wider community.[199] As identified by many local governments and echoed by ICLEI's mantra, because of their proximity to the population, councils play a unique and pivotal role in demonstrating leadership on climate change mitigation (e.g. CCP-NZ, 2009). Likewise, local

[198] Though the goal of the CCP-NZ programme was emission reductions, some councils did seek to achieve carbon neutrality, be it aspirationally or via an actual path and commitment.

[199] In terms of the CCP-NZ programme, 'community' refers to emissions associated with the residential, commercial, and industrial sectors within council's land boundary. In instances were data allows, 'community' also includes the transportation and waste sector as well (CCP-NZ, 2009).

government is ideally situated to ease the implementation of government policy on climate change.

ICLEI and the CCP campaign represent a network of international governments keen on environmental improvement, and specifically climate change abatement. Association with ICLEI's network allowed participant councils in the CCP-NZ programme to benefit from sharing of best practices and the use of tried and tested methodologies. And more directly, programme participants benefited from workshops on capacity building for staff and senior management and technics for working with elected officials.[200] The programme worked with councils to identify and execute actions to reduce GHG emissions corporately and within the community, for example:

- Energy management/ savings initiatives (inc. low-energy and low-carbon technologies); promoting renewable energy;
- Promoting sustainable transport;
- Reducing emissions from landfills; and,
- Promoting awareness

The programme targeted NZ local government.[201] NZ local government is divided into two levels of representation, Regional Councils and Territorial Authorities (District and City Councils). Because these two levels of government have different responsibilities, both organizationally and within the community, they ultimately demonstrate different emission profiles. For example, because District and City Councils are responsible for local infrastructure, emissions associated with water/ sewage pumping may be elevated relative to Regional Councils.

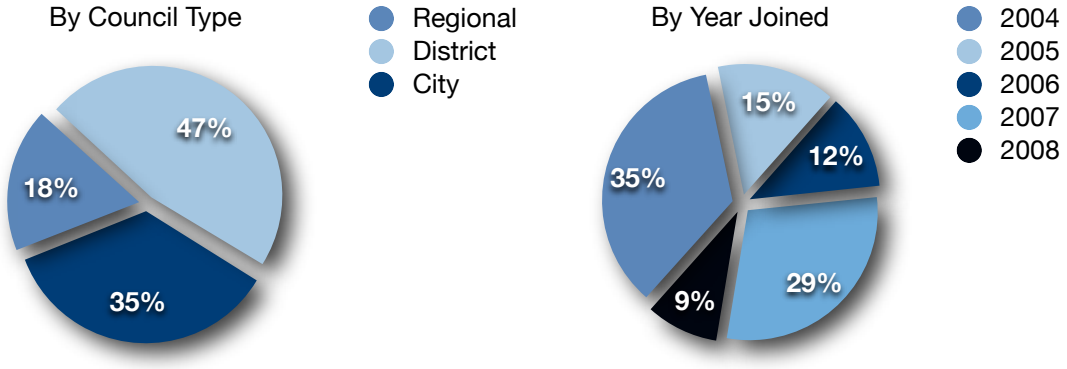
By the time the programme ended in 2009, membership was dominated by district councils, which represented 47% of total membership. This was followed by city, then regional councils which represented 35% and 15% of total membership, respectively (Fig. 3.21). The programme experienced two waves of relatively high enrolment: 2004 and 2007 representing

[200] The CCP-NZ programme included several focused workshops and forums intended to educate and build momentum, as well as facilitate networking. See CCP-NZ (2009) for a list of workshops, forums and events 2004 - 2009.

[201] New Zealand has 11 Regional Councils, 54 District Councils, 12 City Councils, and Auckland Council, which as of November 1, 2010 amalgamated 8 former councils.

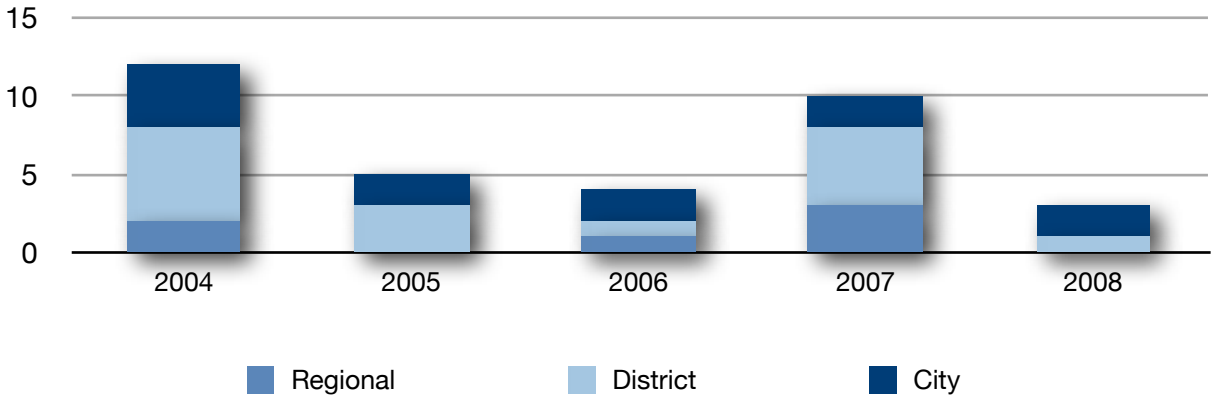
35% and 29% of total programme membership, respectively. At 9%, 2008 was the year with lowest overall enrolment, before the programme ended in 2009.

Figure 3.21: CCP-NZ programme participation as a proportion (by 2009)[202]




Initially, the programme began with 12 councils: two regional councils, six district councils, and four city councils. Membership grew in 2005 to 17 councils, with the bulk of the growth from district councils. In 2006 membership included 21 councils. 2007 saw a spike in membership, with three regional councils, five district councils, and two city councils joining the programme, bringing total membership to 31 councils. By the end of 2008 the programme's total membership was 34 councils: six regional, 16 district, and 12 city councils (Fig. 3.21).

Figure 3.22: CCP-NZ programme membership by date joined, as a proportion of council type (Regional, District, City)[203]




[202] See Appendix, Table 3.11, for data set.

[203] See Appendix, Table 3.11, for data set.

**Programme Funding**

The Ministry for the Environment was responsible for funding CCP-NZ programme participant membership fees. While the exact annual cost of programme participation, 2004 to 2009, is not available, in addition to the annual membership fees, the Ministry for the Environment did provide participant councils' with a one-off payment of $4000 to employ an intern to assist with the completion of Milestone 1.[204] Following the Ministry for the Environment's withdrawal of programme funding, in an effort to prolong NZ participation in the programme, ICLEI provided NZ councils with a revised fee structure. The revised annual fee structure sets out three categories, based on council population (ICLEI, 2009):

1. Councils up to 20,000 population: $1000
2. Councils up to 100,000 population: $2000
3. Councils above 100,000 population: $3000

Despite efforts from ICLEI, NZ councils did not renew their membership following the Ministry for the Environment's withdrawal of programme funding.

**Approach - Carbon Management**

The CCP-NZ programme centred around its strategic framework, a five-step standardised and internationally recognised process for measuring, reporting and monitoring GHG emission reductions. At the core of the framework was the international CCP Greenhouse Gas Application (GGA) Software,[205] which assisted councils develop emission inventories, analyse data, and ultimately benchmark progress against other participant councils (CCP-NZ, 2009).

After councils committed to becoming a CCP-NZ programme participant, they began the five milestones:

> Milestone 1
> Conduct a greenhouse gas emissions inventory, analysis, and forecast (under a business as usual scenario) for corporate and community emissions;[206]

[204] This sum is noted in each councils' Milestone 1 reports, see for example, ECRC (2005).

[205] The GGA software was modified for use in New Zealand in 2004 (CCP-NZ, 2009).

[206] The analysis must take into consideration both local and national data in order to model local community emissions. The majority of emissions from council operations will be a subset of the community emissions, though this will not likely present in the data (ICLEI, 2008a).

Milestone 2
Set emissions reduction goals relative to base-year;[207]

Milestone 3
Develop a local action plan to achieve sustainable reductions in emissions - demonstrate council's path to emission reductions.[208]

Milestone 4
Implement the climate action plan and quantify the benefits of policies and actions; and,

Milestone 5
Monitor progress towards the reduction goal, and start the process for re-inventory and review of the plan.

Along with the GGA, the programme also employed the New Zealand Supplement to the International Local Government GHG Emissions Analysis Protocol (ICLEI, 2008), which was written specifically to address the unique needs of local government, and "seeks to follow certain principles,[209] drawn from the WRI/ WBCSD GHG Protocol, to ensure accurate accounting and reporting" (ICLEI, 2008a). The supplement provided councils with guidance on to how to quantify emissions from their own operations (corporate) and from the communities within their boundaries.[210] Specifically, the New Zealand Supplement:

- Helped councils build accurate[211] inventories for both council's corporate and community emission sources;
- Facilitated the comparison of different communities using a standardised policy-relevant approach;
- Enabled quantifiable measurement toward reduction goals; and,
- Demonstrate consistency with standards adopted by the New Zealand Government.

In terms of the community inventory, ICLEI supplied programme participant councils with information based on 2001 census data for population, occupation, and vehicle registration in each council area. The data was sourced from the NZ Ministry of Economic Development, Energy Efficiency and Conservation Authority, and the MOT (CCP-NZ, 2009).

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[207] Targets should include policy set by national government.

[208] The action place should include existing measures that have been in place since the base-year.

[209] The principles for achieving accurate accounting and reporting under the WRI/ WBCSD GHG Protocol include: relevance, completeness, consistency, transparency, accuracy, and conservativeness.

[210] Corporate emissions were broken down into five main sector: buildings, vehicle fleet, employee commute, water/ sewage, and waste; community emissions were broken down into five sector: residential, commercial, industrial, transport, and waste.

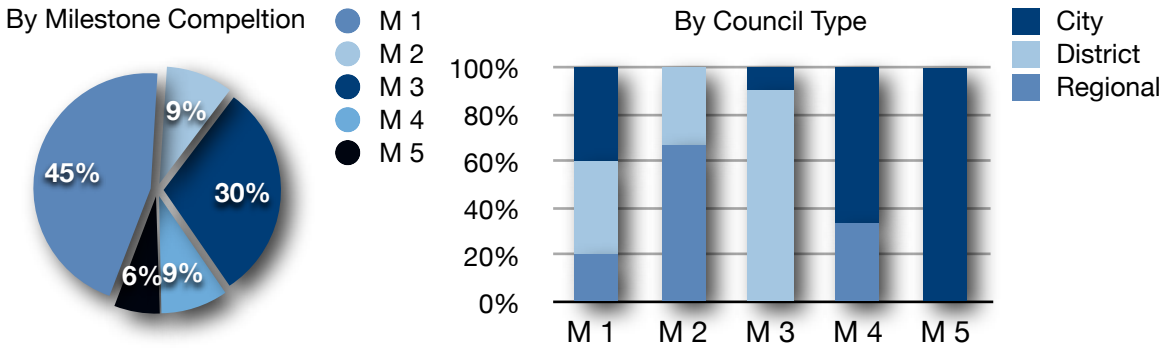
[211] While the CCP-NZ programme, along with the protocols it followed, emphasize the need for accuracy and completeness, councils were reminded that the aim of the programme also included emission abatement actions - for some councils this meant focusing on mitigation efforts.

In addition to allowing councils to gauge the effectiveness of their emission reduction efforts, the five-step framework provided councils with the opportunity to highlight achievements and gain buy-in for future work. Moreover, by working through the milestones, councils "gain[ed] an understanding of how local authority decisions can be used to reduce [GHG] emissions while improving quality of life in the local community" (CCP-NZ, 2009, p. 44).

While carbon neutrality was not the focus of the CCP-NZ programme, councils' interested in pursuing this effort were provided with appropriate resources. Also, in consultation with NZ councils, ICLEI developed the Carbon Neutrality Framework for Local Government - New Zealand Version (See ICLEI, 2008b). This framework, in the absence of a global standard for carbon neutrality, assisted in the establishment of "an independent standard to define the concept and support a claim of carbon neutrality" (CCP-NZ, 2009, p. 4).

While the goal was to complete the five milestones, because the programme finished prematurely, this was not possible for all councils. By the time the programme ended in 2009, only 6% of participant councils had completed the final milestone (Fig. 3.23). Of the three levels of local government involved in the programme, only city councils (2 city councils) reached the final milestone. While milestone 1 was reached by all three council types, milestones 4 and 5 were represented by only two of the three council types, regional and city councils.[212]

Figure 3.23: CCP-NZ programme participation as a proportion of milestone (M) completion (by 2009)[213]




[212] Analysis of these results will occur in Chapter 8.

[213] See Appendix, Table 3.12, for data set.

### 3.4.2. Programme Results

**Emission Inventory Data for the 34 Participant Councils**

CCP-NZ programme participant councils completed an emission inventory for their respective base-year.[214] Based on summated base-year data extracted from ICLEI's GGA software, corporate emissions from the 34 participant councils totalled 146,247 t-CO2e (CCP-NZ, 2009).[215] Emissions data are presented by sector and energy source; corporate sector emissions are categorised by buildings, streetlights, vehicle fleet and water/ sewage, while community sector emissions are categorised by residential, commercial, industrial, and transport.[216] While corporate waste was accounted for by some councils, since fewer than half of participant councils performed a waste audit, there was insufficient information available for inclusion in this data set.[217]

Of the 146,247 t-CO2e total corporate emissions, the building sector represents the largest share of the emissions at 42% (61,423 t-CO2e), with the water/ waste sector representing 27% (39,468 t-CO2e), the streetlight sector representing 18% (26,324 t-CO2e) and the vehicle fleet sector representing 13% (19,012 t-CO2e) (Fig. 3.24). When considered by energy source, electricity is the dominant source, responsible for 65% of corporate emissions (95,060 t-CO2e).[218] Natural gas is the second highest contributor at 12% (17,549 t-CO2e), then diesel and petrol each at 9% (13,162 t-CO2e each), coal at 3% (4387 t-CO2e) and LPG at 2% (2924 t-CO2e).

[214] By the time the CCP-NZ programme had ended in 2009, Hutt City Council had only made 'Political Declaration' for the programme, and thus while able to claim membership, did not complete the first milestone of the programme.

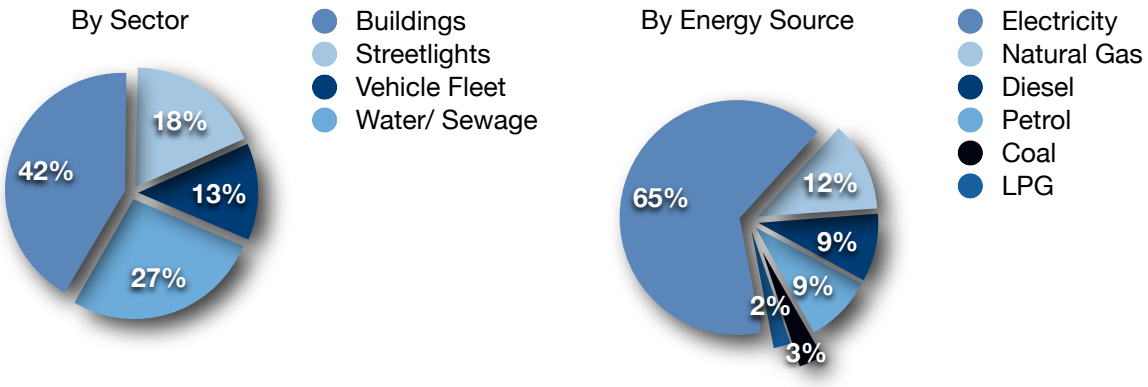
[215] See Appendix, Table 3.13, for data set.

[216] All GHG emissions are equated to carbon dioxide equivalents (CO2e) in tonnes.

[217] For councils that did conduct a corporate waste audit, waste as a proportion of total emissions was less than 1 per cent (CCP-NZ, 2009). Waste emissions (CH4) result from the breakdown of organic matter originating from corporate activities and operations such as green waste.

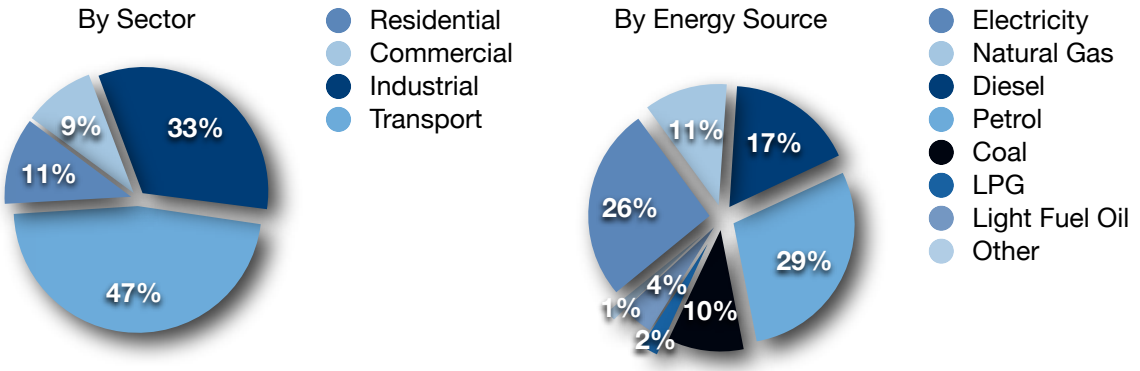
[218] The NZ electricity system is linked between the North and South Island by a direct-current Cook Strait cable. While South Island generation is strictly renewable (HEP and wind), North Island generation consists of coal and gas-fired facilities. During the dry season, South Island generation is supplemented by North Island thermal generation. The NZ government decreed that all NZ grid-connected electricity should have the same emission factor - the average annual electricity factor. Because of weather, the average annual electricity factor varies between 0.2 t-CO2e per MWh in dry years and 0.17 t-CO2e per MWh in wet years (CCP-NZ, 2009; MFE, 2011).

Figure 3.24: CCP-NZ programme corporate base-year emissions profile[219]




Community emission data for the 34 participant councils show a total of 21,860,009 t-CO2e for 2001 base-year emissions.[220] Of the total, the transport sector dominates the emissions profile at 47% (10,274,204 t-CO2e), followed by the industrial sector at 33% (7,213,802 t-CO2e), then the residential sector at 11% (2404600 t-CO2e), and, the commercial sector at 9% (1967400 t-CO2e) (Fig. 3.25). Because NZ waste metrics for base-year 2001 were not available from the Ministry for the Environment, community waste was not included in this data set (CCP-NZ, 2009). When considered by energy source, community emissions are dominated by petrol at 29% (6,427,811 t-CO2e). The second largest source of energy emissions is electricity at 26% (4,890,066 t-CO2e), followed by diesel at 17% (3,980,320 t-CO2e), natural gas at 11% (2,144,802 t-CO2e), coal at 10% (3,082,857 t-CO2e), then light fuel oil, LPG and other at 4% (882,938 t-CO2e), 2% (347,798 t-CO2e), and 1% (103,417 t-CO2e), respectively.

Figure 3.25: CCP-NZ programme community base-year emissions profile[221]




[219] See Appendix, Table 3.13 and Table 3.14, for data sets.

[220] As noted in CCP-NZ (2009), the proportions of emissions allocated to each sector reflect the breakdown of energy emissions by sector for New Zealand.

[221] See Appendix, Table 3.15 and Table 3.16, for data sets.

**Emission Inventory Data and Forecasts for the 16 Study Selection Councils**

The emissions profile of the 16 study selection councils, overall, echo the trends present within the total CCP-NZ programme membership.[222] Because of gaps in individual council Milestone 1 reports (emissions inventory),[223] however, it is difficult to generalise trends within the 16 study selection councils, or compare councils directly.[224] As a result, this section presents data on the level of the individual council. Here, emission profiles and forecasts, for both corporate and community emissions, from a sample of the 16 study selection, is presented.[225] In some instances, where data allows, council emission reduction goals are presented (See Appendix - Tables and Appendix - Figures, for tables and figures that support material presented below).

Environment Canterbury Regional Council

Environment Canterbury Regional Council's base-year corporate emissions total 1227 t-CO2e. Though Environment Canterbury Regional Council does not include the streetlight sector or the water/ sewage sector in its emissions inventory, the emissions trend from base-year (2001) to forecast-year (2010) remains one of growth, save the waste sector which remains even at 37 t-CO2e.[226] Figure 3.36 demonstrates that from base-year to forecast-year, the vehicle fleet sector dominates the emissions profile, at 51% and 50% by weight respectively. And, while as a proportion of total emission weights, the vehicle fleet sector and the waste sector both decrease, and the building sector remains the same, the employee commute sector increases from 28% to 30% from base-year to forecast-year (Fig. 3.28).

[222] See Appendix, Table 3.17; Table 3.18; Table 3.19; and, Table 3.20, for data sets.

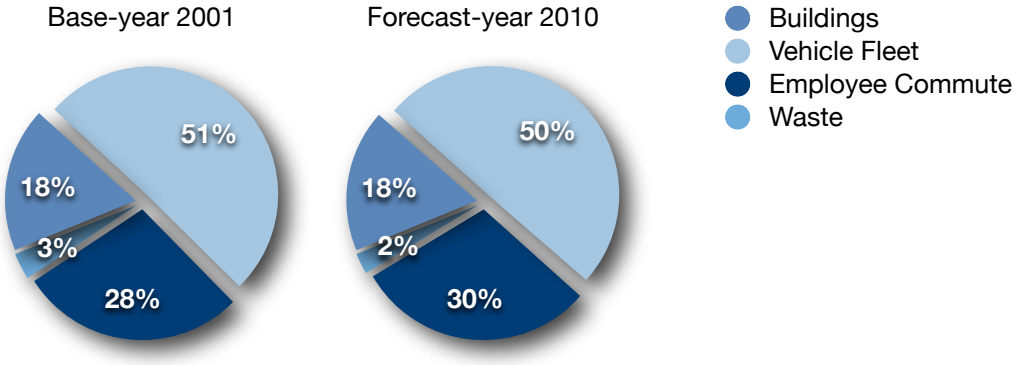
[223] Not all councils include the same sectors in their emissions inventory, i.e. while one council will include emissions associated with employee commute or streetlights, another will not.

[224] See Appendix, Figure 3.26, for a generalized representation of reported community sector emissions. This figure shows an overall emissions increase of 15% from 2001 to 2010.

[225] See also Appendix, Table 3.22 and Table 3.23 and Figures 3.51 - 3.71, for additional graphs, beyond the sample discussed here.

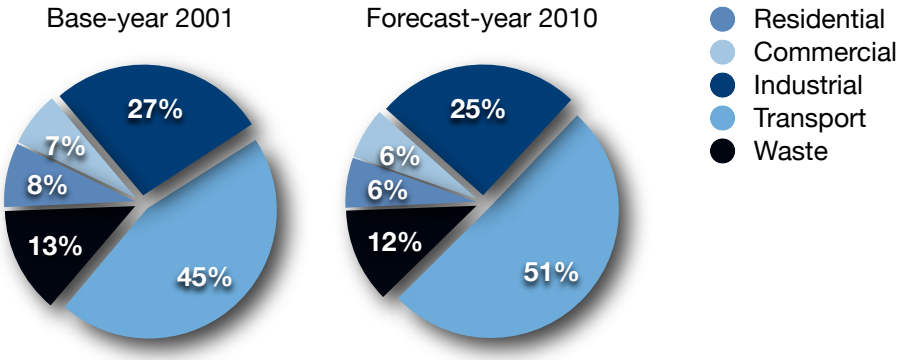
[226] See Appendix, Figure 3.27, for a graphic (bar graph) representation of this data.

Figure 3.28: Environment Canterbury Regional Council corporate emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[227]




In terms of Environment Canterbury Regional Council's community emissions profile, base-year (2001) emissions total 4,758,372 t-CO2e, while forecast-year (2010) emissions total 5,685,804 t-CO2e, a 19% increase.[228] Of these totals, the transport sector represents the largest share, with 2,160,056 t-CO2e (45%) and 2,888,312 t-CO2e (51%) for the base-year and the forecast-year respectively (Fig. 3.30). While the transport sector, as a proportion of total emission weights increased from the base-year to the forecast-year, the remaining sectors decreased.

Figure 3.30: Environment Canterbury Regional Council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[229]




[227] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

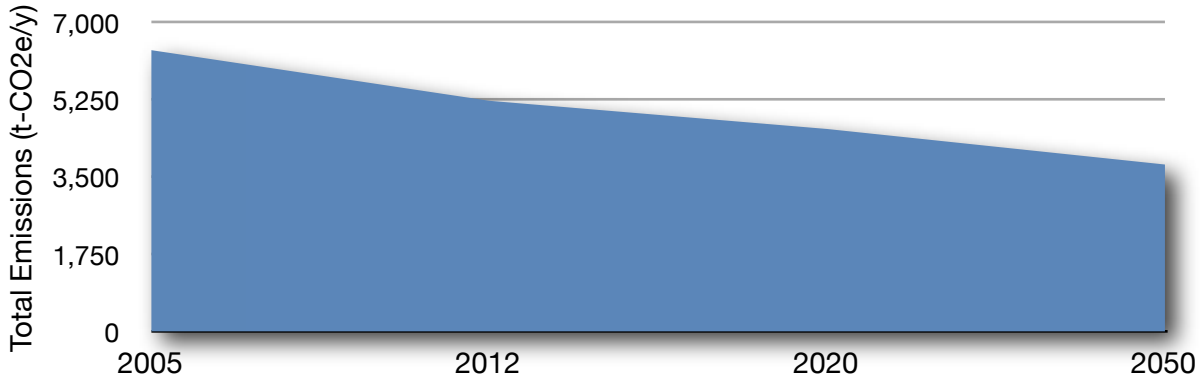
[228] See Appendix, Figure 3.29, for a graphic (bar graph) representation of this data. The 19% increase in total emissions is attributed to the region's population growth. With specific reference to the transportation sector, it is expected that as the number of households increase, so to will the number of cars per household. It is also projected that the population will be begin to move beyond the urban centres, resulting in a further increase in transport related emissions (ECRC, 2005).

[229] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

Greater Wellington Regional Council

Greater Wellington Regional Council's base-year (2005) corporate emissions total 6361 t-CO2e, with the water/sewage sector representing the greatest share of emissions with 4761 t-CO2e. This is followed by the vehicle fleet sector with 890 t-CO2e, the building sector with 384 t-CO2e, the employee commute sector with 247 t-CO2e, and the waste and the airline travel sectors with 40 t-CO2e and 39 t-CO2e, respectively. Greater Wellington Regional Council's Milestone 1 report indicates that council emissions will continue to decrease from the base-year through to 2050,[230] when it expects total emissions to be 3774 t-CO2e, a 41% decrease over the base-year emissions (Fig. 3.32).

Figure 3.32: Greater Wellington Regional Council's corporate GHG emission reduction goal by total emissions[231]




Kaikoura District Council

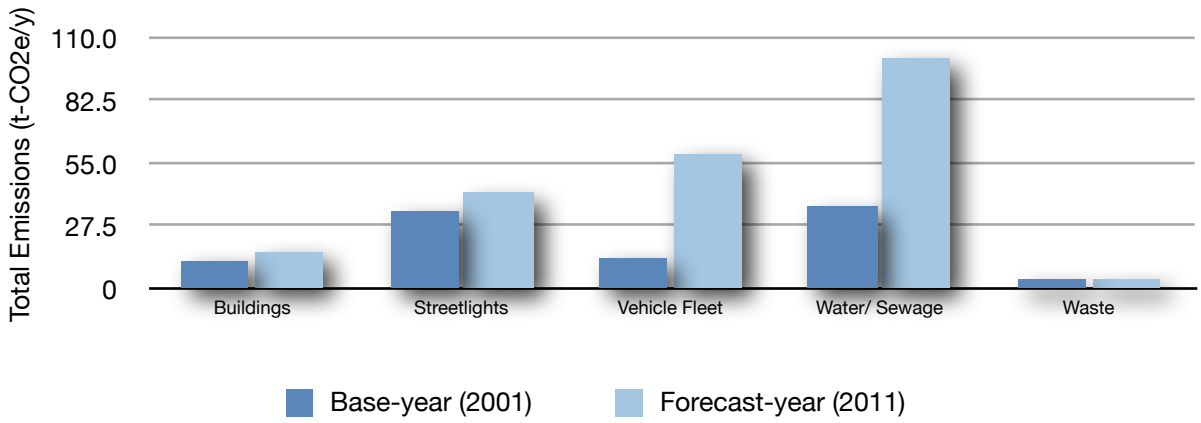
Kaikoura District Council's corporate emissions for base-year (2001) total 99 t-CO2e, with the water/ sewage sector and the streetlight sector representing the largest weight of emissions with 36 t-CO2e and 34 t-CO2e, respectively. By the forecast-year (2011), council projects an emissions increase of 124% for a total of 222 t-CO2e.[232] The increase in emissions is expected to be greatest in the water/ sewage sector and the vehicle fleet sector, which will rise to 101 t-CO2e and 59 t-CO2e, respectively (Fig.3.33).

[230] See Appendix, Figure 3.31, for a graphic (bar graph) representation of this data.

[231] See Appendix, Table 3.21, for data set.

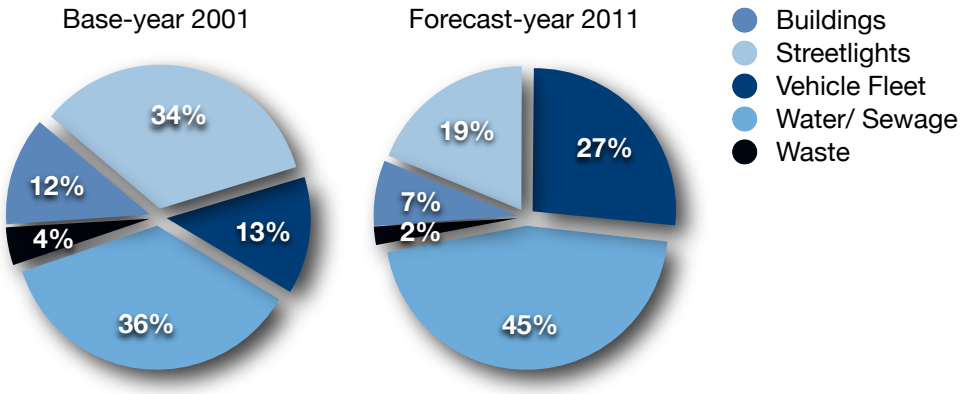
[232] Emissions increase is attributed to growth in the municipality, resulting in growth within the Council over the forecast period (Kaikoura District Council, ? a).

Figure 3.33: Kaikoura District Council corporate emission weights by sector for base-year (2001) and forecast-year (2011)[233]




In terms of total corporate emissions as a proportion of sector representation, the water/ sewage sector dominates for both base-year (2001) and forecast-year (2011) emissions, at 36% and 45%, respectively. While at 34% the streetlight sector represents the second most abundant source of emissions for the base-year, it declines to 19% for the forecast-year, with the vehicle fleet sector increasing to represent the second most abundant source of forecast-year emissions at 27% (Fig. 3.34).

Figure 3.34: Kaikoura District Council corporate emission weights for base-year (2001) and forecast-year (2011) as proportion of sector[234]



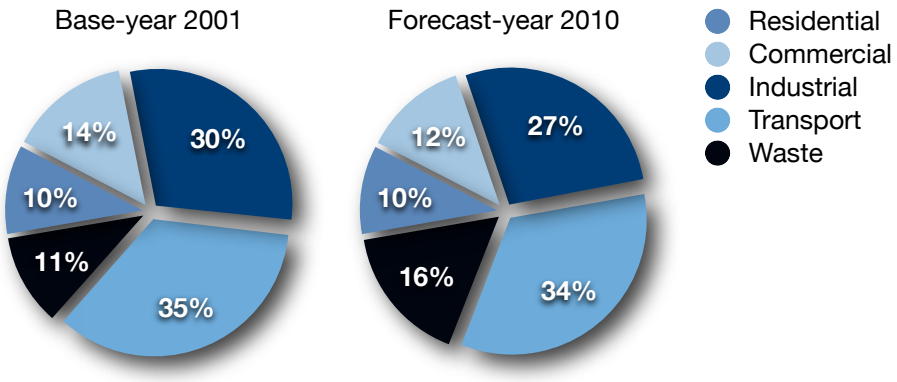

Kaikoura District Council's community emissions profile demonstrates a 30% rise in total emissions from base-year (2001) (25,062 t-CO2e) to forecast-year (2010) (32,757 t-CO2e). The transport sector represents the largest quantity of emissions by weight for both the base-

[233] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[234] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

year and forecast-year, with 8741 t-CO2e and 11,099 t-CO2e, respectively.[235] Figure 44 show's that Kaikoura District Council'c community emission profile, as a proportion of sector representation, is dominated by the transport sector for both the base-year and the forecast-year, at 35% and 34% respectively. While, as a proportion, the transport sector, as well as the industrial and commercial sectors all decrease from base-year to forecast-year, the residential sector remains constant, and the waste sector increases by 5% (Fig. 3.36).[236]

Figure 3.36: Kaikoura District Council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[237]




Southland District Council

Southland District Council base-year (2005) corporate emissions total 2924 t-CO2e. Council projects a 2.8% increase in total corporate emissions by the forecast-year (2010), bringing total corporate emissions to 3008 t-CO2e in 2010. The building sector dominates both base-year and forecast-year emissions, with 1428 t-CO2e and 1449 t-CO2e respectively. While emissions associated with the streetlight and water/ sewage sectors both increase from the base-year to the forecast-year, the vehicle fleet sector remains even at 626 t-CO2e.[238] Figure 3.46 demonstrates that from base-year to forecast-year the building sector dominates the emissions profile, at 49% and 48% by weight in 2005 and 2010, respectively. While, as proportion of total emission weights, the streetlights and vehicle fleet sectors remains constant, the water/ sewage sector increases from the base-year to the forecast-year (Fig. 3.38).

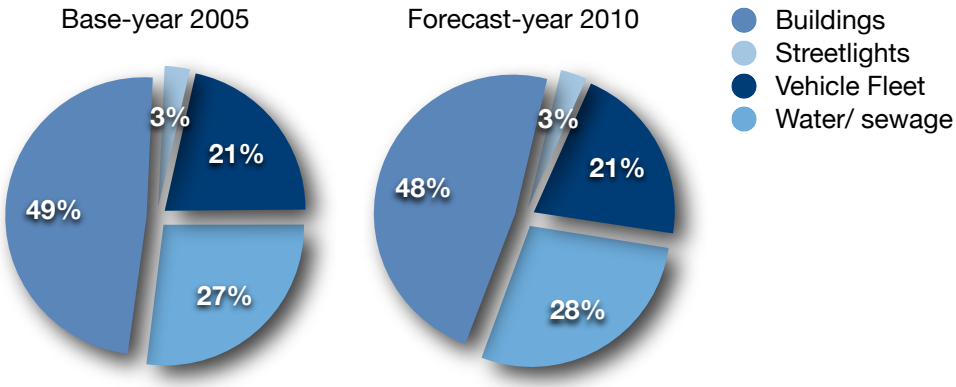
[235] See Appendix, Figure 3.35, for a graphic (bar graph) representation of this data.

[236] This increase in is line with expected population growth in the district over the forecast period (Kaikoura District Council, ?b).

[237] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

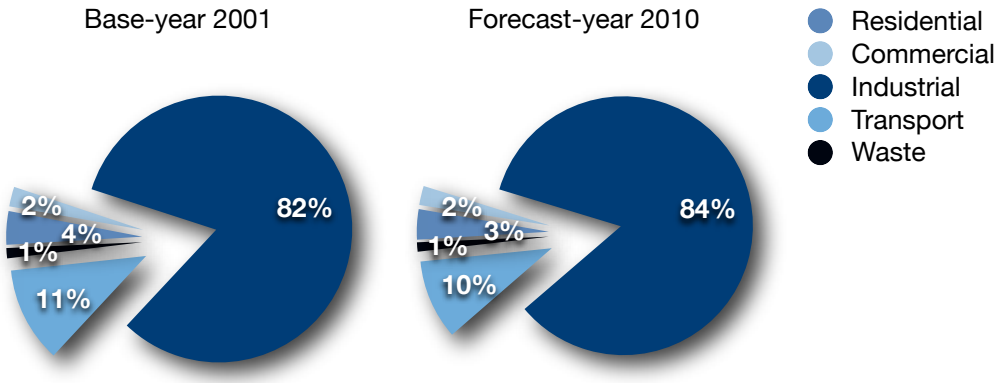
[238] See Appendix, Figure 3.37, for a graphic (bar graph) representation of this data.

Figure 3.38: Southland District Council corporate emission weights for base-year (2005) and forecast-year (2010) as proportion of sector[239]




In terms of Southland District Council's community emissions profile, base-year (2001) emissions total 605,447 t-CO2e, while forecast-year (2010) emissions total 708,228 t-CO2e, a 16% increase.[240] Of these totals, the industrial sector represents the greatest share, with 496,403 t-CO2e (82%) and 596,924 t-CO2e (84%) for the base-year and the forecast-year, respectively. While the industrial sector, as a proportion of total emission weights, increased from the base-year to the forecast-year, the residential and transport sectors both decreased by 1%, with the commercial and waste sectors experiencing no change (Fig. 3.40).

Figure 3.40: Southland District Council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[241]




[239] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

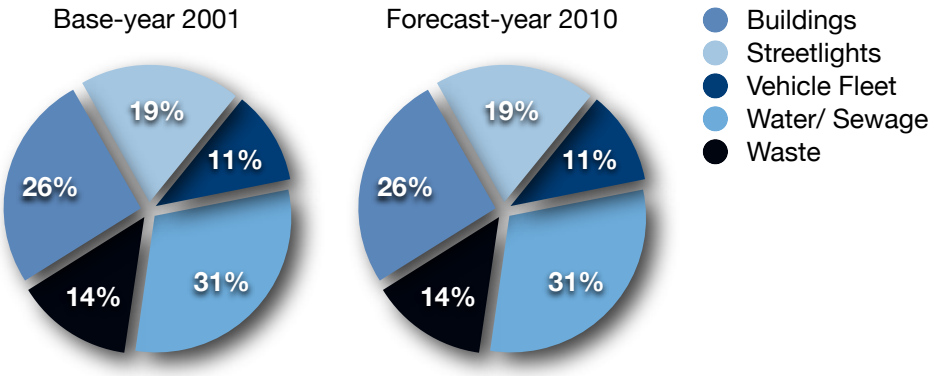
[240] See Appendix, Figure 3.39, for a graphic (bar graph) representation of this data. The increase is attributed to population growth during the forecast period (SDC, 2009). Because Southland District Council's M1 report is light on detail, it is difficult to fully assess the district's emission profile.

[241] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

Hamilton City Council

Hamilton City Council's base-year (2001) corporate emissions total 8194 t-CO2e. Council projects a 92% increase by the forecast-year (2010).[242] This rise is dominated by the water/ sewage and building sectors, which will contribute an additional 2328 t-CO2e and 1962 t-CO2e, respectively, by the forecast-year.[243] As a proportion of weight, the sector contribution to total emissions does not change from base-year to forecast-year, with the water/ sewage sector representing the largest share at 31% respectively (Fig. 3.42).

Figure 3.42: Hamilton City Council corporate emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[244]




From the base-year (2001) to the forecast-year (2010), as a result of population growth and sustained economic growth (Hamilton City Council, 2006), Hamilton City Council community emissions are expected to increase by 13%, from 1,144,000 t-CO2e to 1,301,000 t-CO2e. For both the base-year and the forecast-year, the industrial sector represents the greatest contribution by weight, with 366,080 t-CO2e and 416,320 t-CO2e, respectively.[245] As a proportion of weight, the sector contribution to total community emissions does not change from base-year to forecast-year, with the industrial sector representing the dominate share at 32%, respectively (Fig. 3.44).

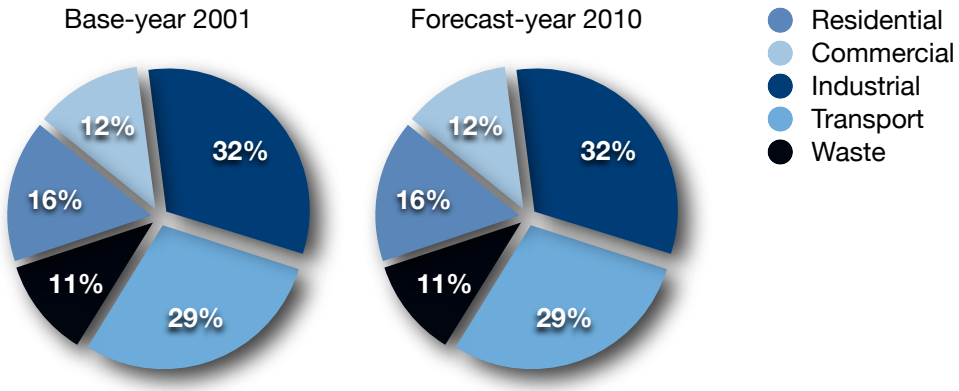
[242] Unfortunately, while Hamilton City Council is forthcoming with details vis-a-vis community emission increases, Hamilton City Council (2006) does not provide details about why it expects cooperate emissions to increase by 92%.

[243] See Appendix, Figure 3.41, for a graphic (bar graph) representation of this data.

[244] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

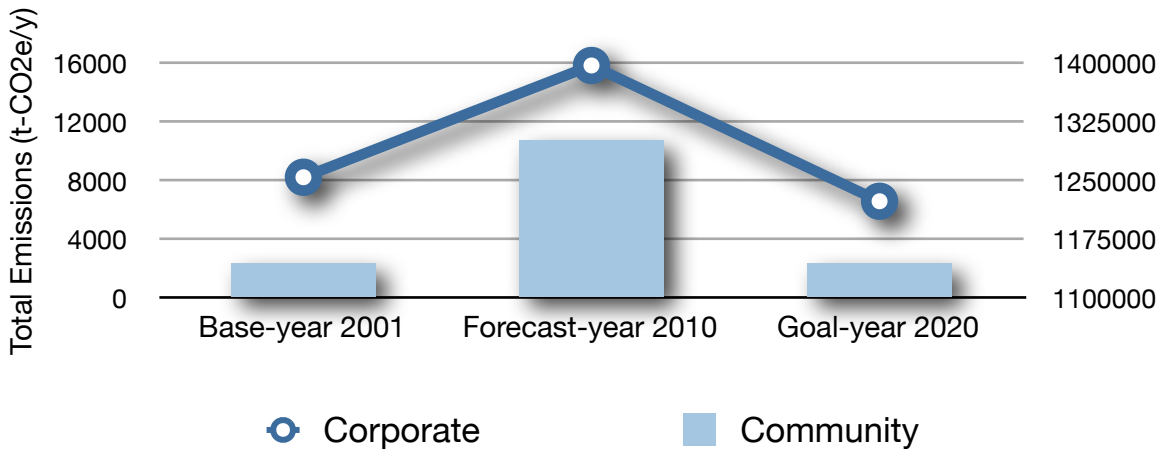
[245] See Appendix, Figure 3.43, for a graphic (bar graph) representation of this data.

Figure 3.44: Hamilton City Council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[246]




In terms of Hamilton City Council's emission reduction goal, by 2020, council hopes to reduce total corporate emissions to 6556 t-CO2e and total community emissions to 1,144,000 t-CO2e. This goal follows an emissions spike in the forecast-year when council expects total corporate emissions to reach 15,812 t-CO2e and total community emissions to reach 1,301,000 (Fig. 3.45).[247]

Figure 3.45: Hamilton City Council GHG emission reduction goal by total emissions[248]




[246] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

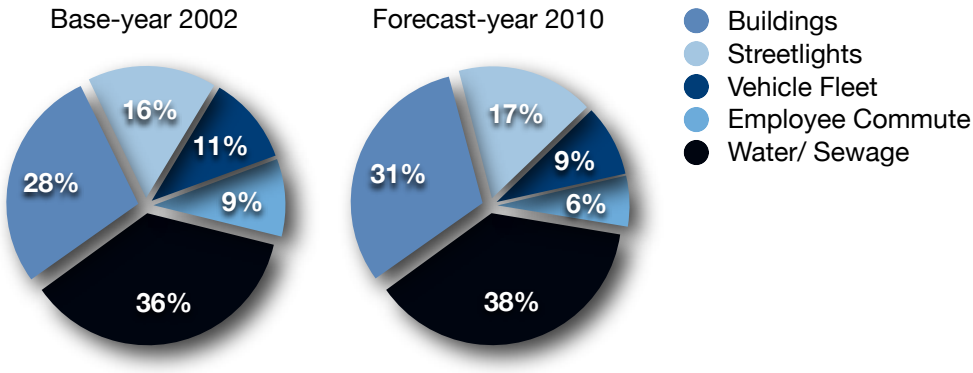
[247] Hamilton City Council plans to reduce GHG emissions by incorporating landfill gas and wastewater methane, and increase its production and purchase of renewable energy (Hamilton City Council, 2006).

[248] See Appendix, Table 3.22, for data set.

Waitakere City Council

Waitakere City Council's total corporate emissions in the base-year (2002) were 6059 t-CO2e, with the water/ sewage sector representing the largest share by weight with 2204 t-CO2e. Council projects a 65% increase in total corporate emissions by the forecast-year (2010).[249] Contributing 3782 t-CO2e, the water/ sewage sector remains the primary contributor to total corporate emissions in the forecast-year.[250] In terms of total corporate emissions as a proportion of sector representation, the water/ sewage sector is the dominate contributor for both the base-year (2002) and the forecast-year (2010) emissions, at 36% and 38% respectively. While the building, streetlights, and the water/ sewage sectors all increase in terms of proportion, the vehicle fleet and the employee commute sectors both decline (Fig. 3.47).

Figure 3.47: Waitakere City Council corporate emission weights for base-year (2002) and forecast-year (2010) as proportion of sector[251]




Waitakere City Council's community emissions profile show's a 25% rise in total emissions from base-year (2001) (900,354 t-CO2e) to forecast-year (2010) (1,126,009 t-CO2e). The transport sector represents the largest quantity of emissions by weight for both the base-year and forecast-year, with 390,334 t-CO2e and 481,751 t-CO2e, respectively.[252] Figure 3.57 show's that Waitakere City Council's community emission profile, as a proportion of sector representation, is dominated by the transport sector for both the base-year and the forecast-year, at 43%. While the transport, residential and commercial sectors all remain the same, by

[249] WaiCC (2006) does not speculate as to why emissions will increase.

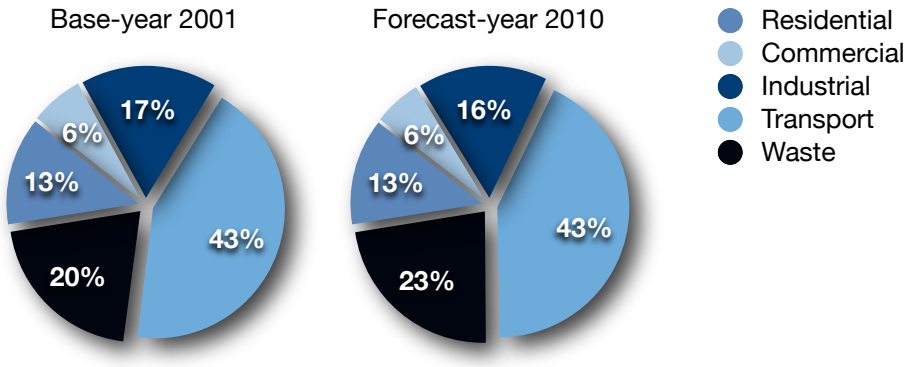
[250] See Appendix, Figure 3.46, for a graphic (bar graph) representation of this data.

[251] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[252] See Appendix, Figure 3.48, for a graphic (bar graph) representation of this data.

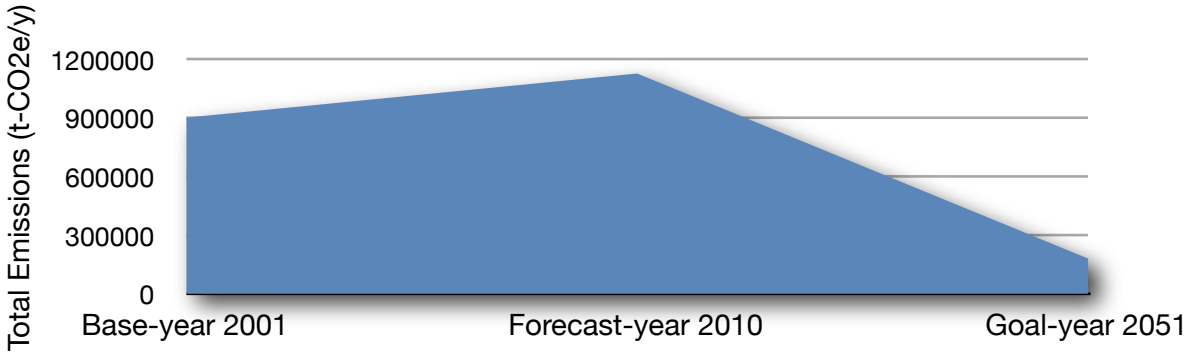
proportion, from the base-year to the forecast-year, the waste sector increases by 3% and the industrial sector increases by 1% (Fig. 3.49).

Figure 3.49: Waitakere City Council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[253]




Following a spike during the forecast-year (2010), Figure 58 show's that Waitakere City Council's community emissions will decrease to 180,071 t-CO2e by 2051 (Fig. 3.50).

Figure 3.50: Waitakere City Council community GHG emission reduction goal by total emissions[254]




**Emission Reductions**

Total quantifiable emission reductions stemming from CCP-NZ programme participant activities from councils' base-year through to June 30, 2009, are in excess of 400,000 t-CO2e, representing some 133,300 t-CO2e per year (CCP-NZ, 2009). Examples of emission reduction activities, as presented in CCP-NZ (2009), include:

[253] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[254] See Appendix, Table 3.23, for data set.

Auckland Regional Council
Energy-efficient light fittings (1600) equipped with sensors for dimming/ turning off lights when not in use. System uses only 14.5% of the energy compared to old system, resulting in a savings of 391 t-CO2e/y (savings of 561,000 kWh/y and $128,000/y).

Hamilton City Council
Installed more efficient pumps with smart controls at Waterworld. The new system save approximately 50 t-CO2e/y (saving of $7000/y).

Nelson City Council
Installed metering for water consumption. Highest summer peak use has dropped by more than 16%, and average peak use by over 37%.

Before the programme ended, councils were also trialling several emission reduction projects, including solar streetlights in Kaikoura District Council, workplace travel plans in Waitakere City Council and Environment Canterbury Regional Council, and vehicle fleet purpose policy and use plans in Franklin District Council and Rodney District Council. Pushing the agenda further, Christchurch City Council, through its Burwood landfill gas converted to energy project, has reduced the Queen Elizabeth II Park swimming complex's grid energy needs, resulting in the reduction of 40,000 t-CO2e/y (savings of $1 million/y). This project has also created revenue of $3.5 million from the sale of emission credits (2008-2012). Wellington City Council has also pursued landfill gas conversion as a method to reduce emissions, and with its project at the Southern Landfill, Wellington City Council expects to put 8 million kWh of electricity per year into the local grid network (savings of 1600 t-CO2e/ y from fossil-fuelled power stations).

Whether councils continue to explore and fund emission reduction projects is yet to be determined. According to OAG (2011), by June 30, 2010, approximately one year after the termination of the CCP-NZ programme, of the 77 local authorities covered in their analysis,[255] 18 councils were continuing to actively measure GHG emissions, while 5 councils that had previously measured emissions as part of the programme, had ceased all effort to do so. And, 13 councils intend to start measuring emissions, while the remaining 41 have never, and have no plans to measure emissions in the future.[256]

[255] The NZ local government sector consists of 83 councils: 11 regional councils, 61 territorial authorities (11 city and 50 district councils), and six unitary councils (territorial authorities with regional council responsibilities) (LGNZ, 2011a).

[256] These figures represent all 77 local authorities in NZ, and are thus potentially misleading when considered in the context of the CCP-NZ programme, which only had 34 councils in its membership.

## 3.5. SUMMARY AND LOCATING THE RESEARCH

### 3.5.1. Summary of Chapter 3

Though NZ trades on slogans such as 'clean and green'[257] and '100% pure' it remains one of the highest per capita GHG emitting countries, ranked 11th in the world (MFE 2009a), and has a rising absolute GHG emissions profile, which increased by 22% over the period 1990-2007 (MFE 2009b).[258] NZ appears nonetheless to be on track to meet its 2008-2012 Kyoto commitment, but this is due to carbon sequestration by forestry plantations (NZ Govt., 2011b; Smith 2011a), which, as acknowledged by Smith, provides only a temporary solution to rising emissions.

While the National-led government does accept the importance of acting on climate change, unlike its predecessor (Clark's Labour-led government), whose policy on climate change was, in its mind, not credible, National does not intend to lead the world: "the new Government's policy goal is not about being first but ensuring New Zealand does its fair share" (Smith, 2009a). For the National-led government, the implication of leading on climate change mitigation, specifically decarburizing the economy, are potentially dwarfed by the insignificance of the country's overall contribution to climate change and the accumulation of atmospheric GHG emissions (e.g. Macey, 2007).

With this in mind, once National took office in late 2008, the Minister for the Environment and Climate Change Issues (Smith) began a review of Labour's climate change policies. Following, many programme were discontinued or modified significantly. For example, legislation enabling the NZ Emissions Trading Scheme was reviewed and modified; A new NZ Energy Strategy, in which economic growth became the key objective was released (MED, 2011); and, the CNPS and the CCP-NZ programmes, two key programme designed to help the NZ public sector reduce its GHG emissions, were terminated.

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[257] International perception aside, according to Buhrs & Christoff (2006, p. 232), while 79% of New Zealanders believe they are "environmentally better off than people in other developed countries," less 7% support the view that NZ is "clean and green."

[258] While 2006 saw an emissions spike of 26% over 1990 levels, subsequent years experienced a relative decline due to drought and the global financial crisis (Milne & Grubnic 2011).

The two programmes shared the ethos that government, both central and local, must lead by example in the effort to mitigate the effects of climate change.[259] To this end, the NZ core departments identified over 300 reduction projects to lower emissions below business as usual (NZ Govt., 2008), with for example, the Department of Conservation having enacted actions to reduce emissions by 1837 t-CO2e (19%) by 2012. And, the total reported and quantifiable emission reductions from council activities, from base year (30 June 2004) to 30 June 2009, is conservatively calculated to be more than 400,000 tonnes CO2e (CCP-NZ, 2009). Beyond emission reductions, organizations involved in the CNPS and the CCP-NZ programmes both identified that senior management awareness with regard to climate change effects and mitigative actions increased as a result of participation in the respective programme.[260]

### 3.5.2. Locating the Research

As noted previously, there is a dearth of academic work exploring how public sector organizations make sense of the climate change discourse (e.g. Brody et al., 2010), and how they determine strategies to manage their carbon and achieve carbon neutrality (e.g. Ball et al. 2009a,b). The processes of conception, outworking and termination of the CNPS and the CCP-NZ programmes provide an opportunity to study the beliefs, values, commitments and narratives at play in organizations which were seeking to act on climate change. Moreover, the ending of these programmes provides an excellent opportunity to better understand how the NZ government values the need to manage carbon. While this chapter does not provide an exhaustive review of NZ's climate change policy, or an analysis of the CNPS and the CCP-NZ programmes (as this will come in later chapters), it does provide a sound overview of the climate change policy context within which the CNPS and the CPP-NZ programmes originated, as well as an informative look at the respective programme's purpose, approach and results. This chapter, in addition to providing fodder for future chapters, thus provides the background context for the thesis research.

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[259] While CNPS programme participant departments were working towards the ultimate goal of achieving carbon neutrality, councils' taking part in the CCP-NZ programme were seeking only to manage their carbon footprint in an effort to reduce GHG emissions (though some councils did seek to reach carbon neutrality).

[260] This will be discussed further in later chapters.

# CHAPTER 4 - THEORETICAL FRAMEWORK

## 4.1. INTRODUCTION

### 4.1.1. Introduction to Chapter 4

The role of the theoretical framework is to provide a conceptual view of how relationships among several factors are important to the objectives of the research (Radhakrishma et al. 2007).[261] With this in mind, termination theory has been selected as the conceptual lens through which the research objectives will be explored.

Termination theory is the theoretical framework employed to rationalise or better understand the purposeful ending of specific government functions, programmes, policies or organizations (e.g. deLeon, 1978; Daniels, 1995; Sato, 2002).[262] Here deLeon (1987) identifies four targets of termination: functions, programmes, policies and organizations. These targets range from services provided to the community by the government, to strategies aimed at solving particular problems, to actual government agencies. Regardless of the target of termination, the essence of the theory and the results of it application can be applied across all four. This is particularly the case for programmes as the termination of organizations or policies will likely trigger programme termination as well (Bardach, 1976). Further, as deLeon (1987) notes, programmes are the easiest to terminate because they are typically closest to the problem and tend to represent the smallest investment. Moreover, as Sato (2002) suggests, because programmes are closest to the problem, they are typically the easier to observe, and thus more prone to critique.

Other appropriate and interesting theoretical frameworks also lend themselves to this line of inquiry. Institutional theory (e.g. Bebbington et al., 2009), for example, specifically institutional entrepreneurship, provides insight into how actors leverage political skill to strategically transform institutions and drive change (Wijen & Ansari, 2007; Levy & Scully, 2007; Dacin et al., 2002), emphasising how actors must break the institutional logic and institutionalise the practice they are championing (Garud et al., 2007). Given New Zealand's

[261] As Irvine & Deo (2006) highlight, because theory provides a filter through which qualitative data is interpreted, its use in research has been controversial.

[262] Other definitions of termination include, for example: "the abolition of an organization with no replacement organization being established" (Peters & Hogwood, 1988); "the moment an organization stops all its market activities" (Woywode, 1998); the loss of the organization's identity, based on the elimination of all its functions (Lewis, 2002); the abolition or absorption by a larger entity (Kuipers & Boin, 2005).

political shift in 2008, the application of institutional entrepreneurship would allow for an interesting exploration of the motivations and drivers for the new Government's (National) abandonment of many of the previous Government's (Labour) climate mitigation strategies.

Similarly, socio-cultural theory explores how alternative ways of perceiving and organising can provide effective solutions to pressing social problems; Verweij et al. (2006) apply socio-cultural theory to the problem of climate change, positing that the Kyoto Protocol has 'stagnated'. In this vein, given that carbon neutrality is no-longer an aspiration of the National-led Government, the application of socio-cultural theory to this line of research could shed light on Government's intended direction vis a vis climate change mitigation.

Ultimately, termination theory was selected because it allows for an exploration of the evolution, from inception, application, termination, through next steps, of the CNPS and the CCP-NZ programmes (discussed in previous chapters). For example, termination theory allows for exploration of the following macro-level questions:

> Programme Inception
> Why were the CNPS and the CCP-NZ programmes created?
>
> Programme Application
> How effective were the CNPS and the CCP-NZ programmes?
>
> Programme Termination
> Why were the CNPS and the CCP-NZ programmes terminated?
>
> Next Steps
> Will future iterations of the CNPS and the CCP-NZ programmes be created?

The CNPS and the CCP-NZ programmes were developed and launched under a government that believed climate change and carbon mitigation were critical challenges requiring a global response and NZ, at the time, wanted to be at the forefront of this effort. Termination theory allows for a probing look into the early cognitions of programme development, and a glimpse into programme execution and desired outcomes. And more specifically, termination theory allows for an assessment of the rationale for the termination of these key government programmes. Incorporating the above assessment of programme evolution, this study will explore the research objectives through deLeon's model for programme termination. More

specifically, the termination of the CNPS and the CCP-NZ programmes will be explored to see if their ending aligns with deLeon's rationales for programme termination (e.g. economics, inefficiency, and political ideology), and if so, is one more pronounced than the rest?

### 4.1.2. Chapter Purpose and Outline

The research has two central objectives: First, to determine why NZ's newly elected National government cancelled the CNPS and the CCP-NZ programmes; and, second, to determine whether despite the discontinuation of these two programmes, NZ government organizations will continue to strive for carbon emission reductions and neutrality. As for the first objective, this research seeks to determine whether NZ government's cancelling of the CNPS and the CCP-NZ programmes aligns with deLeon's rationales for programme termination: economics, inefficiency, and/or political ideology (deLeon, 1982a). The nature of the research is investigative and probing. Termination theory was chosen for this study because it lends itself well to this approach, and because it allows for exploration of the evolution CNPS and the CCP-NZ programmes.

This chapter is divided into four primary sections, (4.1) Introduction, (4.2) State of Termination Theory Literature, (4.3) deLeon's Models for Termination Resistance and Termination, and (4.4) Summary and Locating the Research. Following on from the introduction, section 4.2 provides a look at the current discourse on termination theory. Section 4.3 begins by exploring deLeon's six obstacles to programme termination, then concludes by discussing his three rationales for programme termination. In the final section, section 4.4, in addition to providing a brief summary of the previous three sections, termination theory is discussed in the context of its application to this research, more specifically, how will deLeon's model for programme termination be used in this study.

## 4.2. STATE OF TERMINATION THEORY LITERATURE

Though there is debate and discussion surrounding the ending of government organizations, policies and programmes (Kaufman, 1976, 1985; Peters & Hogwood, 1988; Frantz, 1992; 2002), termination has remained an understudied field since its first application by Biller in

1976 (Graddy & Ye, 2008).[263] And while the extant literature provides little attention to understanding the factors influencing termination (Kirkpatrick et al. 1999), suggesting that "a theory of organizational mortality is still in its infancy" (Adam et al., 2007, p. 226), it remains a potentially important component of the public policy process (e.g. deLeon, 1997). What is more, according to Frantz (2002), while agreement exists about the importance of termination, what the literature lacks is a clear method on how to interpret political factors associated with termination.

Adam et al., (2007) indicate that academic attention to termination research remains of low priority, particularly with regard to public sector institutions, policies and programmes, because it tends to be hidden in policy literature. And as Biller (1976, p. 134) explains: "a terminated policy or organization is no longer of direct consequence to anyone's action... it is no longer purported to, nor is it associated with, the production of any outcomes" and thus tends to avoid attention given that "to study those [programmes] that have ended is to study the inconsequential." Frantz (1992) posits that the field has remained largely untested because of the position that programme termination is the result of (or lack of) luck (see also Kaufman, 1985), and therefore is not productive for scientific inquiry.[264] For Bardach (1976), termination remains a neglected field simply because of its infrequency of occurrence; social scientists thrive on generalisations, not idiosyncrasies.

Despite its obscure location in policy literature, over the decades termination theory has been applied to an array of public sector organizations, policies and programmes, and while the literature has been dominated by US studies (e.g. Bardach, 1976; Behn, 1976; Cameron, 1978; deLeon, 1982b; Frantz, 1992; Daniels, 1995; Kirkpatrick et al., 1999; Harris, 2001; Carpenter & Lewis, 2004; Graddy & Ye, 2008; Shockley, 2012),[265] recent scholarship has

[263] As Frantz (1992, p. 175) points out in her review of policy termination literature, "despite the universal recognition of termination as a vital component of policy studies, it remains 'the neglected butt of the policy process' (Behn, 1976), or more poetically stated, 'a wrongly underattended issue' (Biller, 1976).

[264] While Kaufman (1985) argues that organizational survival is a matter of luck, and that there are no patterns in the process, Kirkpatrick (1999), on the other, notes that while there is indeed a paucity of theory-generating case studies from which to draw, there nevertheless exists sufficient examples to establish patterns among cases.

[265] These studies range from research and development programmes, to the D.C. motorcycle squad (Bardach, 1976) and public training schools in Massachusetts (Behn, 1976; Bardach, 1976), to the California Mental Health system (Cameron, 1978), the U.S. Comprehensive Employment and Training Act (deLeon, 1982b), the U.S. National Hansen's Disease Centre (Frantz, 1992, 2002), Oklahoma's State training schools (Daniels, 1995), the U.S. Federal Revenue Sharing Program (Kirkpatrick et al. 1999), term limits in the Michigan legislature (Harris, 2001), through a range of US agencies (Carpenter & Lewis, 2004; Shockley, 2012), and hospitals in California (Graddy & Ye, 2008).

expanded to include a more global application (e.g. Dery, 1984; Sato, 2002; Botterill, 2005; Hsu, 2005).[266]

**Myth of Immortality**

Early termination studies postulated that while organizational termination is expected to be widespread in the private sector, the opposite is true for public sector organizations, where an organization can persist even beyond its raison d'être ceases to exist.[267] An example of such is Kaufman (1976) where the author suggests that public sector organizations are immortal. As Peters & Hogwood (1988) point out, however, Kaufman's study sample was biased towards durable organizations and because the study was limited to two points in time, failing to capture the period between these two points in time, the author underestimated the rate of actual termination. Following on, and contrary to Kaufman's work, Lewis (2002) argues that public sector agencies are not immortal,[268] and suggests that the myth of organizational immortality is due in part to the dearth of academic debate on termination. Lewis (2002) adds that scholars have failed to adequately connect with the 'widespread' occurrence of agency termination, particularly with regard to termination associated with changing ideologies.

Later, Kaufman (1985) goes on to argue that the termination or persistence of an organization (private or public) is a function of chance. According to Adam et al. (2007), while this line of debate implies that organizational termination is distributed randomly, empirical study, however, failed to support this hypothesis (e.g. Woywode, 1998).

In Kuipers & Boin (2005), four key variables from the literature are demonstrated to influence the longevity (survival) of an organization: (1) Newness - older organizations are more likely to survive; (2) Size - budget/personnel is positively correlated with survival; (3) Political autonomy - will increase organizational performance and public reputation; and, (4) Professionalism - positively correlated with survival. Their study failed, however, to prove

[266] For example: Project Renewal in Israel (Dery, 1984), Leprosy Isolation Policy in Japan (Sato, 2002); network termination in Australia's agriculture sector (Botterill, 2005), Taiwan's nuclear programme (Hsu, 2005).

[267] A bureaucracy is characterized by permanence and continuity, while a market is characterized by change; markets are designed to tolerate termination (Biller, 1976).

[268] While the Kaufman (1976) study consisted of two points in time,1923 and 1973, the Lewis (2002) study looked at agency mortality between two points in time,1946 and 1997.

that organizational characteristics do in fact influence termination or persistence (e.g. Adam et al., 2007).

Adam et al. (2007) agree that an organization's age is positively related to its chance of survival,[269] and that the general performance of an organization does affect its likelihood of termination; the probability of termination increases as an organization becomes less efficient and effective at achieving its objectives. But while earlier studies suggest that smallness will increase the likelihood of organizational termination (e.g. Aldrich & Auster, 1986), more recent research shows a non-monotonic correlation between organizational size and hazard of termination (e.g. Kieser, 2002).

**Bang or Whimper**

Another line of inquiry postulates that termination is "exceedingly difficult," is rarely attempted, and when attempted is rarely successful (Bardach, 1976, p. 123).[270] When termination does occur, however, it occurs with either a bang or a whimper. In the case of the latter, termination is characterised by a long-term decline in resources. Termination with a bang, on the other hand, while similar, and more common, tends to result following a lengthy political struggle, followed by a shift in power (change in administration) and a single authoritative decision to terminate (e.g. Sato, 2002).

This is demonstrated in Sato (2002) where the isolation of leprosy patients continued to occur long after it was scientifically known to be unnecessary for the majority of cases. Isolation persisted as a result of bias in expert opinion (conservative scientist advocated for isolation; social protection), ambivalence among patients and the policy's low priority among policymakers. As the literature has shown, while a shift in ideology or scientific

[269] According to Adam et al. (2007), once an organization reaches a certain critical age threshold, its chance of survival becomes high.

[270] According to Bardach (1976), termination is rarely attempted for 5 key reasons: (1) Programmes are designed to perpetuate themselves, inc. sunk costs; (2) Politician shy away from termination because it is usually unsuccessful and brutal; (3) Political leaders are hesitant to admit guilt in producing a bad policy (also issue of sunk costs); (4) The reformer contribution to pro-termination coalition is reluctant to damage the existing programme apparatus, i.e. employees; and (5) Too few effective political incentives. Moreover, proponents of termination tend to fall into 3 categories: (1) Oppositionists, those that dislike the policy because in their view it is bad policy; (2) Economisers, those that want reduce government spending, or redirect funds elsewhere; and, (3) Reformers, those that believe termination is necessary for successful adoption of a substitute policy or programme.

DeLeon's model posits six key reasons why policy or programme termination may be particularly difficult (deLeon, 1978; Hogwood & Gunn, 1984; Frantz, 1992): (1) Intellectual reluctance; (2) Institutional permanence; (3) Dynamic conservatism; (4) Anti-termination coalitions; (5) Legal obstacles; and, (6) High start-up costs. These will be discussed further in the following section.

Kirckpatrick et al. (1999) identify 'crucial variables' (obstacles) that affect termination: (1) Inherent characteristics, i.e. raison d'être, longevity, invisibility, complexity, distribution of benefits; (2) Political environment, i.e. prevailing political ideology, size and strength of coalition, powerful allies, compromise, speed - fast termination have a greater chance of success; and, (3) Constraints or barriers, anti-termination coalitions, dynamic conservatism, legal obstacles, start-up costs, fear of uncertainty.

understanding can lead to termination (e.g. Cameron, 1978; Daniels, 1994; deLeon, 1982a), scientific evidence on its own tends not to be a sufficient rationale for termination. In this case, policy termination ultimately occurred as a result of the skilful leadership of the terminator, who was in the end able to achieve consensus with key actors and thus abolish the Leprosy Isolation Policy.

In some cases, as Daniels (1995) indicates, programmes can end with both a bang and a whimper: while Oklahoma's programme of public training schools ended with a bang, the essence or the mandate of the training schools shifted to psychiatric hospitals, and as a result the policy continues with a long whimper. Similarly, termination can be viewed as a 'special case of the policy adoption process,' or as a critical component in correcting a flawed policy (i.e. Sato, 2002). In other words, policy or programme 'A' must be terminated or curtailed in order for policy or programme 'B' to flourish (Bardach, 1976). This is not without its challenges, however, as inertia and other obstacles must first be overcome before termination can occur. Botterill (2005) concurs, indicating that policy termination is more likely in an environment that fails to demonstrate strong networks. In their study of network termination in Australia's agriculture sector, they show that established policy, characterised by weak networks, was terminated and replaced by stronger policy capable of withstanding external shocks.

**Causal Factors for Termination**

Building on the existent research on termination of public organizations, Adam et al. (2007) identify two key causal factors that influence programme termination: (1) organizational stickiness (resistance); and, (2) political incentives (Table 4.1).

Table 4.1: Typology for programme termination

| Typology for Programme Termination | | **Organizational Stickiness (endogenous)** | |
|---|---|---|---|
| | | High | Low |
| **Political Incentives (exogenous)** | High | 1 - Reform | 2 - Termination |
| | Low | 3 - Status Quo | 4 - Risk |

Adam et al. (2007, p. 231)

Adam et al. (2007)'s typology suggests that in a scenario of high stickiness and high political incentive for organization termination, despite the high political will to terminate, because of support within the organization, the whole organization will not likely be terminated, but instead reformed or restructured. In the case of low stickiness and high political incentive for organization termination, because of little organizational resistance and high political will, termination will likely result. In terms of a high stickiness and low political incentive for organization termination scenario, termination is not likely given that their is little political incentive to terminate and strong organizational capacity to resist demands of termination, and as a result the status quo will persist. The final scenario, low stickiness and low political incentives for organization termination, results in a precarious status quo; instability and risk of potential termination persist because of the organization's low capacity to resist should termination become a threat.

A common thread in this literature is deLeon's model for programme termination (e.g. Graddy & Ye, 2008). According to deLeon (1982a), policy and programme termination is considered to have three rationales: Political ideology; economics (cost reduction); and, programmatic inefficiencies. Though sometime considered individually, "a comprehensive examination of most termination decisions will reveal them to have aspects of – or at least nominal allusions to – all three" (deLeon, 1982a, p. 7).

Typically, economics and inefficiencies are cited openly by government as motivating policy and programme termination – as deLeon (1982a, p. 8) suggests, "fiscal and operational responsibility is a virtual catechism in government offices; no agency wishes to be accused of wasting money or acting in an inefficient manner." In practice however, political ideology seems to be responsible for the majority of government terminations (Behn, 1976; Cameron, 1978; deLeon, 1982a, 1987; Frantz, 2002; Lewis, 2002; Adam et al. 2007) – "ideology is, of course, the lifeblood of politics" (deLeon, 1982a, p. 14).[271]

**Evaluation as a Key Component of Termination**

The literature also demonstrates that evaluation is a critical component of the termination process (e.g. deLeon, 1982a, 1982b; Dery, 1984; Hogwood & Gunn, 1984). Whether or not a

[271] DeLeon's model for programme termination will be expanded on in the following section, Section 4.3.

given programme undergoes an evaluation prior to its termination can provide insight into the rationale for the termination. For example, if political ideology is the motivation for programme termination, an evaluation of the programme's effectiveness may be redundant. Whereas, in order to deem a programme economically unsound or inefficient, some method of evaluation to determine such would be necessary. As deLeon (1982a, p. 22) adds, if government suggests that a programme was terminated on the grounds of economics or efficiencies, it would imply that an evaluation would be imperative to the termination process; "how else can one arrive at program costs or benefits lacking skilled evaluations and the evidential base they provide?" Moreover, the lack of evaluation prior to programme termination harms the transparency and credibility of government actions (deLeon, 1982a).

Sato (2002) goes further and notes that there is a lack of standard when it comes to assessing policies, and when standards are applied, there is a lack of understanding as to how these were derived. In a similar vein, Dery (1984) suggests that evaluation should be a precondition for termination, and posits that the important question is not to evaluate but what to evaluate, what objectives are important in making the decision to terminate. DeLeon (1982b) suggests a number of key consideration before the determination of termination is made:

- What are the termination objectives? Who sets them? How clear are they? Who has the responsibility? What are the set of accepted criteria?
- To what extent should the targeted agency be involved? How can one structure positive incentives for that agency (to do what?), given its projected loss in resources?
- How does one map or estimate the political and economic consequences of severe programme retrenchment? How does one perform the analysis with the necessary equity and evenhandedness? What or whose perspectives are used?

In practice, evaluation can help predict and understand outcomes of programme termination. This according to Sato (2002, p. 42), can help identify those that will be affected by the termination, and "reveal the political and ideological factors that enter into policy termination decisions". Ultimately, while the literature demonstrates that little rigorous evaluation lay behind programme termination, "neither the evaluation nor the termination stage makes much sense without the other" (deLeon, 1982a, p. 20).

## 4.3. DELEON'S MODELS FOR TERMINATION RESISTANCE & TERMINATION

DeLeon's (1978) model for termination resistance posits that rational, deliberate termination may be hindered by six obstacles: (1) Intellectual reluctance; (2) Institutional permanence; (3) Dynamic conservatism; (4) Anti-termination coalitions; (5) Legal obstacles; and, (6) High start-up costs. As for termination, deLeon (1982a), argues that policy and programme terminations have three key rationales: (1) Economics (i.e. cost reductions); (2) Programmatic inefficiencies; and, (3) Political ideology.

### Obstacles to Programme Termination

The first obstacle to programme termination, intellectual reluctance, refers to the notion that people, given their vested interest, tend not to like to discover that the underlying thinking behind a policy or programme is flawed or out of date (see also Daniels, 1995); Government's are reticent to admit that they have made a mistake (e.g. Sato, 2002). In the case of Japan's Leprosy Isolation Policy, for example, as Sato (2002) describes, because many experts were unwilling to accept international recommendations to redirect leprosy policy toward outpatient service, intellectual reluctance served to obstruct the dismantling of a policy that was no longer scientifically necessary. Frantz (1992) adds that this obstacle also refers to the idea that government's avoid dealing with endings, preferring beginnings, i.e. new and exciting actions or programmes.

DeLeon's second obstacle to termination relates to institutional permanence. This obstacle suggests that organizations and programmes are designed to endure political shifts. As Lewis (2002) adds, those in power will often anticipate the loss of their influence and insulate new programmes against future termination should the eventuality occur. While this notion accepts that political ideology is an important factor in programme termination, it also implies that programmes are created to perpetuate a value-laden (if partisan) service (e.g. Sato, 2002).

DeLeon's third obstacle to termination is dynamic conservatism, or a programme's ability to change its raison d'être. In this instance, programmes that are able to evolve their objectives and respond to changes in their environment, are able to elude termination (e.g. Frantz, 1992; Daniels, 1995): "when struck with the realisation that the goals which originally justified

their existence are no longer meaningful, all [programmes] alter those goals" (Frantz, 1992, p. 182). For example, as Kirkpatrick et al. (1999) describes, instead of becoming redundant once the Salk vaccine was developed, the March of Dimes shifted their attention to diseases other than polio.

DeLeon's fourth obstacle refers to groups or networks of people that take action to resist the termination movement. As Frantz (1992) notes, these coalitions usually have a vested interest in the programme and tend to counter evidence contrary to their cause. This was the case in Frantz (1992), where despite the rationality of the Government's position, the US Government was stymied by a strong anti-termination coalition (community, patients, staff) for nearly 50 years before they were able to terminate the National Hansens Disease Centre.[272]

DeLeon's fifth barrier to termination relates to legal obstacles. Legal ramifications and the need for due process has the effect of postponing programme termination. As Frantz (1992) describes, legal obstacles played a significant role in the impediment of the National Hansens Disease Centre closure.

Under deLeon's model, the last barrier to termination relates to high start-up costs. This obstacle has two distinct but related prongs. The first prong relates to the sunk costs of the programme to be terminated. In this instance, because sunk costs will be lost following termination, termination may be avoided or only partial termination may occur, i.e. the cancelling of some components of a policy or programme. Moreover, terminating a programme implies that Government made a mistake in launching the programme in the first place, and government's avoid admitting their errors (Daniels, 1995).

The second prong associated with this barrier relates to the high start-up cost of a replacement/ alternative programme (e.g. Daniels, 1995) and the political liability this may present: "the high costs and political liabilities incurred by proposing policy termination make the recommendation of policy termination extremely difficult and unlikely" (deLeon,

[272] In a similar, but administratively different example, to stave off the termination of the US Department of Energy, nuclear power proponents, the solar energy and conservation promoters formed an anti-termination coalition (deLeon, 1983).

1978). In either case, compensatory costs, which may be large depending on the obligation to those affected by the termination (e.g. Frantz, 1997; Graddy & Ye, 2008), can serve as an effective barrier to termination.

**Rationales for Programme Termination**

While political ideology tends to be the most important (i.e. Hsu, 2005), the three rationales should not be considered in isolation of each other. Financial or budgetary constraints are typically highlighted for prompting programme termination or retrenchment (e.g. Levine, 1982; Behn, 1980; Graddy & Ye, 2008). Budget deficits, be it actual or projected, spur policy makers to enact austerity measures and reduce programmes were possible (e.g. Ignatius & Ibrahim, 1982).

As deLeon (1982a) explains, governmental inefficiencies, in other words the government's inability to deliver on objectives in an efficient and timely manner, may also lead to programme termination. In this case if a programme is shown to be too expensive in its delivery of products and/or service, then the programme is deemed inefficient and is terminated. For example, in the US, Government held that there was a more effective and efficient method for maintaining the country's military deterrence in the air, and thus the Skybolt missile project was terminated (e.g. Enthoven & Smith, 1971).

Political ideology, or political orientation as it relates to specific programmes, as deLeon's third rationale suggests, "necessarily influences the termination decision" (deLeon, 1982a, p. 8). Even in time of economic prosperity, political ideology will lead to the termination of programmes that do not align with political interest: "Critical decisions are made on the basis of political expediency and beliefs... they are far removed from rigorous programme evaluation and analytic influence" (deLeon, 1982a, p. 14).

DeLeon (1982a) notes that government administrators tend to cite the first two rationales for motivating termination; even without evidence, public officials tend to reference cost overruns and programmatic inefficiencies as sufficient cause for programme termination. DeLeon maintain's "however convenient and defensible the pleas of economy and efficiency

might be, in terms of policy termination, they are in practice much less important juxtaposed to the third criterion, political ideology" (deLeon, 1982a, p. 9).

As Lewis (2002, p. 91) adds, termination to improve economy or efficiency tend to have political overtones, "what one party views as frivolous expense or unforgivable error, another party views as an indispensable component of its programme. Perceptions of success or failure hinge on political predispositions." Moreover, as Graddy & Ye (2008) point out, it is inherently difficult to estimate costs and efficiencies, and in any case, unless the argument offers a more effective method for achieving the desired goal, it is unlikely to garner much support.

As Graddy & Ye (2008) suggest, given that public programmes are supported by public funding it is not beyond expectation that budgetary stresses can cause programme termination (e.g. Kirkpatrick et al., 1999). But while this implies cost savings will be incurred following termination, it does not address how the determination of which programmes will be terminated is made. Further, according to Graddy & Ye (2008), compensatory costs may be large depending on the obligation to those affected by the termination (e.g. Frantz, 1997). For example, as deLeon (1982a) notes, while the termination of projected nuclear power stations in the Pacific Northwest led to short-term saving for the state public utilities, the forecasted 700-800 % increase in electricity rates necessary to cover the bonds issued to purchase the reactors, make the economic argument for termination weak (see also Redburn, 1982; Wilhelm, 1982).

In terms of programme inefficiency leading to termination, often federal programmes are canceled with the belief that state or local government can deliver the programme more effectively and efficiently because of their proximity to the population (deLeon, 1982a; see also Stanfield, 1981).

Political ideology, rather than economies and efficiencies, is argued by deLeon (1982a) to be the dominant cause of termination. This assertion is supported by Frantz (1997, 2002) and

Lewis (2002).[273] It is more likely than not, however, that a combination of these three forces is responsible for termination.

## 4.4. SUMMARY AND LOCATING THE RESEARCH

### 4.4.1. Summary of Chapter 4

Though other theoretical frameworks, i.e. institutional theory, social cultural theory, do lend themselves to this research, termination theory was selected because it allows for an exploration of the evolution, from inception, application, termination, through next steps, of the CNPS and the CCP-NZ programmes.

Despite an abundance of interest in the 1970s, scholarly attention to termination theory has remained low over the past two decades (e.g. Adam et al., 2007). Some suggest that the theory's obscure location in policy literature has contributed to its weakening application. That said, however, the use of termination has grown beyond American case studies to include a more global application (e.g. Botterill, 2005; Hsu, 2005).

In application, termination theory broadly refers to two primary themes: obstacles to policy or programme termination, and rationales for policy or programme termination. DeLeon's model posits six key reasons why policy or programme termination may be particularly difficult (e.g. deLeon, 1978: 286; Hogwood and Gunn, 1984; Frantz, 1992): Intellectual reluctance; institutional permanence; dynamic conservatism; anti-termination coalitions; legal obstacles; and, high start-up costs. Additionally, Kirkpatrick et al. (1999) suggest that inherent characteristics, such as raison d'être, complexity and distribution of benefits and, the political environment, (i.e. the prevailing political ideology), also serve to resist termination. Bardach (1976, p. 129) adds that policy or programme termination is rarely attempted because the "potential reformer contribution to the pro-termination coalition is often reluctant to damage the existing program apparatus, i.e. by demoralising employees, without being sure that their own vision of something better will actually materialise in its stead."

[273] According to Frantz (2002), political decision making is more an art than a science and such policy is governed more by politics than rationality - skillful discourse is more powerful than being right.

As for rationales for termination, according to deLeon (1982a), policy and programme termination is considered to have three rationales: economics (cost reduction); programmatic inefficiencies; and, political ideology. Typically, economics and inefficiencies are cited openly as motivating policy and programme termination. In practice however, political ideology seems to be responsible for the majority of government terminations (e.g. Cameron, 1978; deLeon, 1982a, 1987; Frantz, 2002; Lewis, 2002; Adam et al. 2007).

It is further noted that evaluation is a critical component of the termination process (e.g. deLeon, 1982a, 1982b; Dery, 1984; Hogwood and Gunn, 1984). Whether or not a given programme undergoes an evaluation prior to its termination can provide insight into the rationale for the termination. For example, if political ideology is the motivation for programme termination, an evaluation of the programme's effectiveness may be redundant. Whereas, in order to deem a programme economically unsound or inefficient, some method of evaluation to determine such would be necessary. And while Dery (1984) suggests that evaluation should be a precondition for termination, a standard methodology for programme evaluation remains illusive (e.g. Sato, 2002).

### 4.4.2. Locating the Research

This research seeks to contribute to termination theory literature by applying deLeon's rationales for programme termination to the contemporary topic of climate change, specifically, to the termination of two key programmes designed to help the NZ Government reduce GHG emissions and achieve carbon neutrality: CNPS and the CCP-NZ programmes. This will provide insight into the robustness of deLeon's rationales for programme termination, and give an appreciation for the inertia, vested interests and legitimacy of the respective programmes through time.

Both the CNPS initiative and, funding for, the CCP-NZ programme were ended unexpectedly. By applying deLeon's rationales for programme termination, this research aims to determine whether the termination of these two programmes aligns with economics, programmatic inefficiency or political ideology. If indeed political ideology was the rationale for ending these two programmes, where does that leave NZ's commitment to leadership in achieving carbon neutrality?

The practical implications of this research may thus provide insight into NZ's new direction on domestic and international climate change policy: Does the ending of the CNPS and the CCP-NZ programmes represent the National-led Government's new agenda for climate change mitigation? In other words, depending on why the programmes were terminated, it can be determined whether the National-led Government supports the need for climate change mitigation via carbon management in the public sector, or simply does not support programmes that are seen as being Labour initiatives, regardless of their merit; termination without a formal evaluation of the programmes effectiveness could confirm the latter for example.

In addition to applying deLeon's model for programme termination, this study will also employ deLeon's model for termination resistance to assess whether obstacles hindered the termination of these programmes. This may shed light on the embeddedness of climate change thinking within the NZ public sector and provide insights for further investigation into organizational resolve for carbon mitigation - that is how important is Government support in the determination of whether an organization will pursue (potentially costly) carbon mitigation actions?

# CHAPTER 5 - METHODS

## 5.1. INTRODUCTION

### 5.1.1. Qualitative Research Methodology[274]

Qualitative, or inductive research emerged as a reaction to late 19th and 20th century positivism (Brower et al., 2000). Unlike positivist, or quantitative research, where research questions are deductive, specific and measurable, and the goal is generalizability and replicability, qualitative studies often address ambiguous phenomena, generate rich evidence from the everyday experience and focus on context (e.g. Liamputtong, 2011; Bernard & Ryan, 2010; Brower et al., 2000). Because of its holistic and interpretive nature, qualitative research has been accused of lacking rigor and failing to measure up to the "cannons of positivist research" (McCabe & Holmes, 2009, p. 1519). For Weber (2004, p. xi) "it is time to assign the rhetoric of positivism versus interpretivism to the scrap heap. It no longer serves a useful purpose." And in the end, as Jootun et al. (2009, p. 42) suggest, "no single research method is inherently superior to any other; rather the appropriateness of the method must be appraised in relation to the research question."

A qualitative methodology was chosen for this study because of the need to extract the personal narratives of the managers responsible for CNPS and the CCP-NZ programmes. As Liamputtong (2011) explains, while from a reliability perspective, it is not possible to rigidly replicate qualitative research,[275] qualitative inquiry does, quite effectively, allow the researcher to explore meaning, interpretations and individual experiences. This approach was critical in order to better understand the dynamics influencing the termination of the CNPS and the CCP-NZ programmes. Accepting and understanding the limitations to qualitative inquiry, I have made efforts, as described throughout this chapter, to mitigate positivistic criticism.

[274] While methods refers to the way data is collected, methodology refers to the 'principles underlying particular research approaches' (Dew, 2007, p. 433). According to Carter & Little (2008), method is determined by methodology.

[275] Qualitative researchers have developed criteria to ensure rigor, what some call 'transactional validity,' or 'interpretivist criteriology' (Liamputtong, 2011, p. 21).

### 5.1.2. Chapter Purpose and Outline

The purpose of this chapter is to contextualise the methodological approach, and to demonstrate the 'route that leads to the goal' - the method to the research.[276] Describing the approach lends credibility and authenticity to the research process and the study itself. This is particularly important in qualitative research because of the inherent potential, resulting from its interpretive nature, for bias and soft science (Liamputtong, 2011).

This chapter is divided into seven primary sections, (5.1) Introduction, (5.2) Reflexivity, (5.3) Research Ethics, (5.4) Research Design, (5.5) Research Execution, (5.6) Research Interpretation, (5.7) Summary and Locating the Research. Building from the introduction, which discusses the value of qualitative inquiry, section 5.2 describes the researcher's reflexive approach to the study. Section 5.3 explains the procedures taken to ensure that the study maintained a level of ethical standard. Section 5.4 explains the use of case studies as research strategy. In section 5.5 initial contact with participants is discussed, along with the interview strategy and execution. Section 5.6 presents narrative analysis as the primary methodological approach, explains theme development and the application of Termination Theory. In the final section, section 5.7, in addition to providing a brief summary of the previous six sections, justifies the use of a qualitative approach in this research.

## 5.2. REFLEXIVITY

As a method to enhance rigor and validity, reflexivity is a "critical" component of qualitative research (Jootun et al., 2009). McCabe & Holmes (2009) describe reflexivity as the act of reflecting on one's ability to remain unbiased while realizing and accounting for the effect of existing bias on the research (McCabe & Holmes, 2009).[277]

A researcher's history, beliefs and interests will affect what they choose to study, how they approach the study, and how they ultimately interpret the findings (e.g. Finlay, 2002; Horsburgh, 2002; Wall et al., 2004; Irvine & Deo, 2006). While this bias may hold the potential to skew the research, Malterud (2001) contends that by identifying ones biases at

[276] From Greek, method means 'a route that leads to the goal' (Liamputtong, 2011, p. x).

[277] Steps to reflexive research, adapted from Ahern (1999): 1. Identify interests, beliefs and ways on knowing that you may take for granted while pursuing the research; 2. Identify areas of subjectivity; 3. Identify potential personality conflicts and determine how this may influence research progress; 4. Learn to recognize lack of neutrality; and, 5. Continuously look inward to assess how, as researcher, I am influencing the research process.

the outset of the research, and maintaining a reflexive approach throughout the research process, bias can be minimized. This is the notion of bracketing, where in the context of reflexivity, is the effort to avoid allowing one's assumptions to shape data collection and interpretation (e.g. Ahern, 1999; Weber, 2004; Bernard & Ryan, 2010).[278] As Jootun et al. (2009) and Liamputtong (2011, p. 25) suggest, reflexivity in fact enhances the quality of the research by extending the researchers understanding of how their history and experience contribute to the stages of inquiry. Finlay (2002, p. 541), however, warns that reflexive analysis can be a difficult endeavor, as "experience is invariably complex, ambiguous and ambivalent."

Though reflexivity is gaining acceptance in qualitative research (e.g. McCabe & Holmes, 2009), unless its practice is made more explicit, as cautioned by Allen (2004, p. 23), "there is, [however], a real danger that it will remain little more than a device for according studies the appearance of academic rigor, and its potential to enhance understanding of the research process and strengthen the quality of our studies will be lost." This perspective is echoed by Finlay (2002, p. 543), where the author notes that reflexivity is attacked as being "woolly, unscientific bias" (Finlay, 2002, p. 543).

Qualitative researchers acknowledge that it is impossible to meaningfully separate the researcher from the research (e.g. Hand, 2003). And, ultimately, as described by Ahern (1999), researchers are a part of the social world that they study, and play a key role in the co-construction of meaning (Etherington, 2004). Reflexivity recognizes the reciprocal relationship between the researcher and the research, and strives to make this interaction explicit. With this in mind, and as suggested by Etherington (2004), it is important for the researcher to situate themselves in the research by describing their experiences and beliefs.

**Situating the Researcher - A Reflexive Consideration**

My academic background is eclectic in both discipline and institution. While I am currently pursuing a PhD in Accounting and Information Systems, with a focus on public sector organizational carbon management (University of Canterbury, Christchurch, New Zealand), I

[278] According to Wall et al. (2004, p. 21), bracketing allows researchers to 'highlight and put on hold [their] everyday assumptions.' ... holding judgement on observation, and remaining open to data as it develops (Jootun et al., 2009).

began my academic journey with a Bachelor's Degree in Geography, which focused on the physical environment (McMaster University, Hamilton, Canada). Following, I completed a Bachelor's Degree in Environmental Studies, which focused on environmental theory and planning (University of Northern British Columbia, Prince George, Canada). Next I completed a Master's Degree in Environmental Studies, which focused on Arctic climate change science and policy (York University, Toronto, Canada).

My professional experience is similarly diverse, spanning both the private and public sectors, including a variety of not-for-profit non-governmental organizations. Beginning with the private sector, I worked in a large public relations firm as an Executive Assistant. While studying, I worked as a Teaching Assistant in Biology, then in Geography; during this time I also served as President of the Eco Conscience Association. Between my second undergraduate and graduate degrees, I worked as Tactician in the British Columbia Ministry of Forests. Following my graduate degree, I worked as a Programme Officer for the Ontario Ministry of the Environment (MOE). Then, I took on the role of Climate Change and Carbon Management Coordinator at the Toronto Region Conservation Authority (TRCA).[279] While at the TRCA, I also consulted externally on issues relating to climate change science, adaptation and mitigation (e.g. with organizations such as Conservation Ontario, MOE, Greenest City - Clean Air Partnership, World Green Building Council Secretariat, Asia-Pacific Network for Global Change Research). This position led to a post at Ryerson University, where I continue to teach senior planning students about climate change science and policy.[280]

Having grown up in a small town on a large lake, surrounded by forests and open fields, I was raised to appreciate nature for its intrinsic value. My academic training has provided me with the tools necessary to understand how the natural world functions, how ecosystems remain in balance, and importantly, how we as a society influence this complex balance. My professional experience has allowed me to appreciate how difficult it is for a capitalist wealth-driven society, to remain in balance with the natural world. And, how despite the

[279] In this role I developed and managed several projects, both large in scale and capital, including for example: TRCA Climate Audit and Action Plan; The Living City Carbon Footprint Calculator; The City of Vaughan Carbon and Energy Management and Partners for Climate Protection Project; Getting To Carbon Neutral: A Guide For Canadian Municipalities; Underground Thermal Energy Storage Project; TRCA Carbon Neutral Project; UHI Mitigation Strategy for Municipalities.

[280] I teach a similar course to business and marketing students at the University of Canterbury (Christchurch, New Zealand).

efforts of some (from within both the private and public sectors), without collective global agreement and action, balance with nature will remain a challenge.

The combination of training and experience has led to my strong belief that as a society we will never right our imbalance with nature as long as we continue to use the same thinking that got us into the problem in the first place.[281] Anthropogenic climate change, while planetary in scale, is at its root, a symptom of our collective compulsion to live unsustainable lifestyles, to live beyond the natural carrying capacity of the ecosystem.[282] While governments and corporations continue to shortsightedly place economic benefit above environmental health, our balance with nature will remain illusive.

It is clear from my background that I appreciate the environment, but I also understand the need to take from the environment. I am also acutely aware that not all green actions are indeed environmentally positive actions. Greenwashing is an endemic problem and ultimately hurts environmental efforts. As an academic I find it important to view things from a critical perspective. As a result, I actively strive to remain objective,[283] be it as a student, project manager, consultant, or researcher. This is particularly important when conducting qualitative research, as it is impossible for the researcher to remain neutral. Because of the political nature of the current study, and the emotional attachments of many of the interviewees, it is crucial as a researcher that I remain aware of my own biases, and appreciate how this may influence the evolution of the research (e.g. Jootun et al., 2009). By including this reflexive approach, it is my hope to present, as Horsburgh (2002) suggests, a transparent and, as objective as possible, interpretation of the data.

## 5.3. RESEARCH ETHICS

The nature of this topic and the specific focus of my research has the potential to be politically charged and operationally sensitive. As a result, it was important that I consider the ethics associated with both the line of inquiry and my interactions with interviewees (e.g. Myers & Newman, 2007). Liamputtong (2011) notes that while qualitative research typically

[281] Albert Einstein once said: 'The world will not evolve past its current state of crisis by using the same thinking that created the situation' (source unknown).

[282] See Lovelock (2009) for a cautionary review of humanity and Gaia theory.

[283] It remains, however, as noted in Ahern (1999), humanly impossible to be totally objective.

does not cause physical harm to the participants, there are nevertheless vital issues that must be considered in order to maintain an ethical decorum. To this end, and in accordance with the University of Canterbury's policy on field interviews with human subjects, I attained clearance from the university's Human Ethics Committee for all field interview related components of my research.[284]

In accordance with the university's policy on field interviews with human subjects, in the initial email I sent out to prospective interviewees, I provided an information brief detailing my objective as a researcher, the nature of the research, the expectation on the interviewee, and the rights of the interviewee (Appendix, Article 5.4; Article 5.5). Prospective interviewees were also provided with contact information for my supervisors.

Once interviewees were selected, and before the interviews occurred, interviewees were required to sign a consent form (Appendix, Article 5.6). The consent form indicated that the research had been reviewed and approved by the University of Canterbury's Human Ethics Committee. In signing the consent form, interviewees acknowledged that their participation was strictly voluntary, that they are free to decline to answer any questions or withdraw from the study at any time without disadvantage.

Moreover, the consent form also required participants to recognise that while the Ethics Committee is aware of the general areas to be explored in the interview, because of the nature of the semi-structured interview process, questions would evolve as the interview progressed. Interviewees were also informed that once the research had been completed, all raw data (with the code names of the research participants only) would be held in secure storage for a period of five years, then destroyed. And, that while the results of the research may be published, the interviewee's anonymity would be preserved.[285]

Similarly, before the interview began, I provided each interviewee with a signed security and confidentiality form (Appendix, Article 5.7). In signing this form I indicated to the

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[284] A Low Risk Ethics Application was approved by the University of Canterbury Human Ethics Committee for CS1 interviews on 31 August 2009, for CS2 S1 interviews on 25 November 2009, and CS2 S2 interviews on 22 October 2010 (Appendix, Article 5.1; Article 5.2; Article 5.3).

[285] Because of the nature of her former position as Prime Minister of New Zealand, Helen Clark agreed that it would not be possible to preserve her anonymity in this research.

interviewee that I would ensure that all personal information, the identity of the interviewee, the contents of the digital audio recording and the raw transcript would be kept confidential. In addition, this form represents my agreement that the list that matches participants' identities with their research identification code will be kept secure and confidential.

## 5.4. RESEARCH DESIGN: CASE STUDIES

### 5.4.1. Stages of Analysis

Case study research remains a target for positivist researchers, who believe it to lack rigor and accuracy (Liamputtong, 2011). And even within qualitative circles, the use of few case studies over several case studies has the potential to draw criticism for being too shallow a sample.[286] To this point, Siggelkow (2007, p. 20) cites the example of a fictitious talking pig, and argues that even "a single case can be a very powerful example."[287] Brower et al. (2000) concur, adding that single case research can provide contextually rich insight. For this study, two case studies were chosen because together they provide an interesting account of NZ public sector organizations' resolve for carbon management (e.g. Stake, 2008). This study involves two similar yet distinct case studies: Case Study 1: CNPS Programme (CS1), which focuses on the six lead-core departments involved in the CNPS programme; and Case Study 2: CCP-NZ Programme (CS2), which focuses on 16 councils involved in the CCP-NZ programme.

While both case studies involve a series of semi-structured interviews (the resultant transcripts form the primary data of this study) with the senior managers responsible for the delivery of the respective programme within their organization, Stage 1 (S1), CS2 also includes a longitudinal component where seven of the 16 councils that participated in S1 are revisited for a second interview, Stage 2 (S2), following 1 years time (Table 5.1). The purpose of S2 is to provide another layer of richness to the data, "expos[ing] different perspectives of reality" (Liamputtong, 2011, p. 27).

[286] A case study, as explained in Liamputtong (2011, p191) is an intensive study of a single unit or case where attention is on the particular.

[287] Adapted from Ramachandran (1998), Siggelkow (2007, p. 20) cites the following example to demonstrate the power of a single case study: 'You cart a pig into my living room and tell me that it can talk. I say, "Oh really? Show me." You snap with your fingers and the pig starts talking. I say, "Wow, you should write a paper about this." You write up your case report and send it to a journal. What will the reviewers say? Will the reviewers respond with "Interesting, but that's just one pig. Show me a few more and then I might believe you"? I think we would agree that that would be a silly response. A single case can be a very powerful example.'

Table 5.1: Stages of analysis

| Case Study | Target | Number of Organizations Interviewed | Stage | Source of Data |
|---|---|---|---|---|
| 1: CNPS Programme | Ministry/ Department | 6 | Preparation | Analysis and Overview of GHG Emission Inventories and Management Plans (for all years available up to 2009) |
| | | | 1 | Semi-structured Interviews. NOTE: Each interview may have multiple interviewees, see Table 5.4. |
| 2: CCP-NZ Programme | Local Government Council | 16 | Preparation | Analysis and Overview of GHG Emission Inventories and Management Plans (for all years available up to 2009) |
| | | | 1 | Semi-structured Interviews. NOTE: Each interview may have multiple interviewees, see Table 5.5. |
| | | Longitudinal Component - 1 year later | | |
| | | 7 | Preparation | Analysis of Annual Reports and Long Term Community Council Plans as relevant to carbon management. |
| | | | 2 | Semi-structured Interviews. NOTE: Each interview may have multiple interviewees, see Table 5.6. |

Along with the semi-structured interviews with senior managers, both case studies also involved semi-structured interviews with the programme architects responsible for macro aspects of the programmes creation and operation. Data resulting from these interviews serves to triangulate findings from the semi-structured interviews with senior managers and will emerge in Chapter 8.

In preparation for S1 interviews, GHG emission inventories and management plans were reviewed.[288] For CS1, this included analysis of Ministry Emission Inventory Reports for 2007 and GHG Emission Reduction Plans for 2008. For CS2, this included analysis of Council GHG Emission Analysis and Forecast Reports and Greenhouse Action Plans for 2004 - 2009.[289]

In preparation for S2 interviews, Council reports related to climate change and carbon management (i.e. board reports, financial and policy documents) were reviewed. In addition, Annual Reports (2004 to 2010), Annual Plans (2010) and Long-term Community Council Plans (LTCCP) (2009 to 2019)[290] were analyzed using word count analysis to determine the occurrence of key words related to climate change and climate change mitigation: ‘climate change’, ‘carbon’, ‘carbon management’, ‘carbon neutral’, ‘Communities for Climate

[288] A summary of the analysis of these documents is presented in the Context and Background Chapter.

[289] Because CCP-NZ Programme participants joined the programme at different times, and progressed through the programme at their own pace, some Councils may not have completed a Greenhouse Action Plan.

[290] The purpose of the LTCCP is to set out activities and services that the Council intends to provide for the coming 10 year period. The plan allows for long term planning of responsibilities and obligations, including costs. NZ Councils are required by law to develop a LTCCP every three years. In general, the purpose of a Council Annual Plan is to communicate to the public Council’s intentions regarding objectives and financial obligations for the the coming year. The purpose of a Council Annual Report is to demonstrate to the public how Council has delivered on objectives set out in the Annual Plan and LTCCP.

Protection - New Zealand Programme' (or 'CCP-NZ'). The inclusion of this line of inquiry serves to triangulate the data, and thus enhance the validity of the study (e.g. Carpenter & Suto, 2008; Liamputtong, 2011).

Findings resulting from the semi-structured interviews with the senior managers, as well as those resulting from word count analysis of S2 Council Annual Reports, Annual Plans and Long-term Community Council Plans can be found in Chapters 6 and 7.

### 5.4.2. Study Sample Selection Criteria

**Case Study 1: CNPS Programme - Organizations**

Of the 34 core NZ Ministries that were involved in the CNPS initiative, six were explored in S1 of this study (Appendix, Table 5.2). The six ministries chosen for this study were selected based on their lead role in the CNPS initiative, as discussed previously in Chapter 3, and because these organizations represent a good cross section of core NZ ministries in general (NZ Govt., 2007b).

The remaining 28 ministries involved in the CNPS initiative were not included in this research for reasons of time constraint and limited access to personnel responsible for managing and delivering the initiative within the respective ministry. As noted in Chapter 1, following programme termination, many key senior managers responsible for the delivery of the programme were disestablished, thus removing corporate memory of the CNPS initiative and rendering interviews near impossible in many ministries.

**Case Study 1: CNPS Programme - Programme Architect**

The programme architect, former Prime Minister Helen Clark, was chosen for this case study because of her role in championing the CNPS programme. Efforts to meet with Nick Smith, Minister for the Environment and Climate Change Issues, were unsuccessful.[291]

**Case Study 2: CCP-NZ Programme - Organizations**

Before the CCP-NZ programme was terminated its membership included 34 councils, ranging from small local councils to large regional councils. While time constraints and

[291] As noted previously in Chapter 3, Nick Smith was the Minister responsible for terminating the CNPS programme.

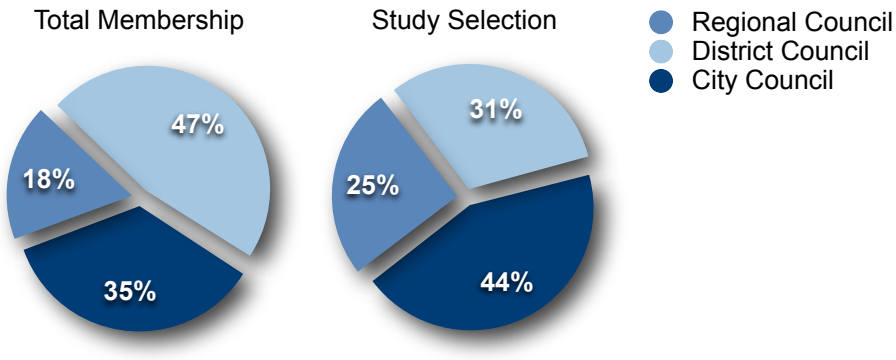
restricted access to key personnel made it impossible to include all councils involved in the CCP-NZ programme, 16 councils (four regional, five district and seven city) were explored in S1 of this study.[292]

Council selection was based on several factors, including the type of council (regional, district or city), year of initial membership, the milestone achieved while participating in the program, the council's population and location (North v. South island), and in the end, council's willingness to participate in the research (Appendix, Table 5.3). Ultimately, the 16 councils selected for this research represent a good multi-level cross section of NZ councils.

Council Type

Of the 34 councils involved in the CCP-NZ Programme, the majority were district councils (47%), followed by city councils (35%), then regional councils (18%). While the Study Selection does not strictly represent this trend, it nonetheless demonstrates a more equal weighting of the three council types. Importantly, as will become clear in the proceeding text, city councils were given slightly greater representation in this research (44%) (Fig. 5.1).

Figure 5.1: CCP-NZ programme membership by council type[293]



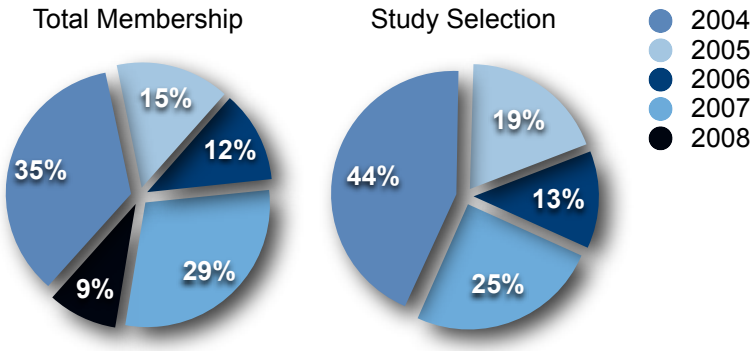

Year of Initial Membership

As a proportion of the year councils joined the programme, the Study Selection is quite similar to the Total Membership. The exception to this trend is 2008, given that all councils represented in the Study Selection had joined the programme by the end of 2007 (Fig. 5.2).

[292] As with the CS1, because many senior managers responsible for the delivery of the CCP-NZ programme were disestablished following programme termination, access for interviews was limited, and became increasingly more limited as time passed.

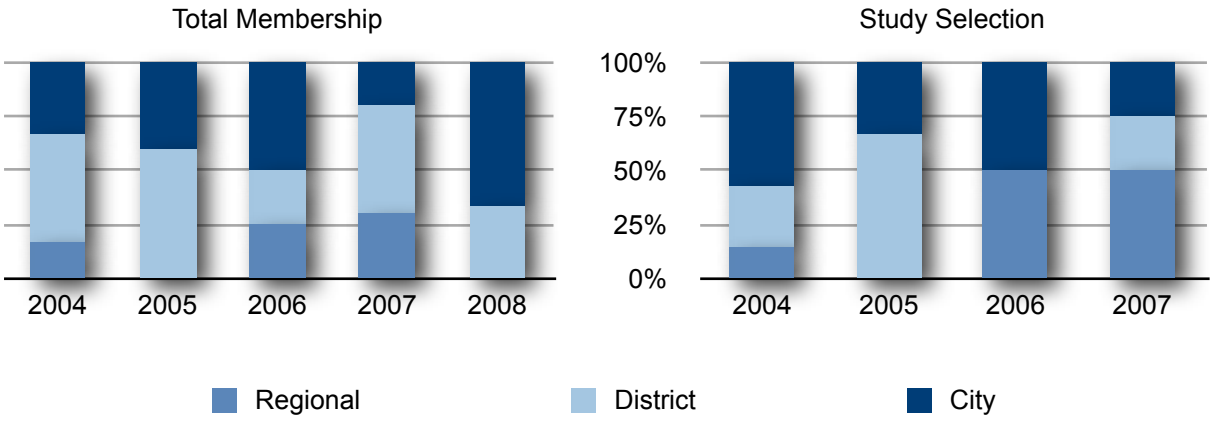
[293] See Appendix, Table 5.3, for data set.

Figure 5.2: CCP-NZ programme membership by year joined[294]




In order to capture the narrative of early adopters, the Study Selection does favour councils that joined the programme in 2004 (44%). In terms of the Study Selection, 2004 also represents the year when the greatest percentage of city councils joined the programme, and given that city councils represent the largest component of the Study Selection, it was important to maintain this relationship in the Study Selection (Fig. 5.3).

Figure 5.3: CCP-NZ programme membership by date joined, as a proportion of council type[295]




Milestone Achieved

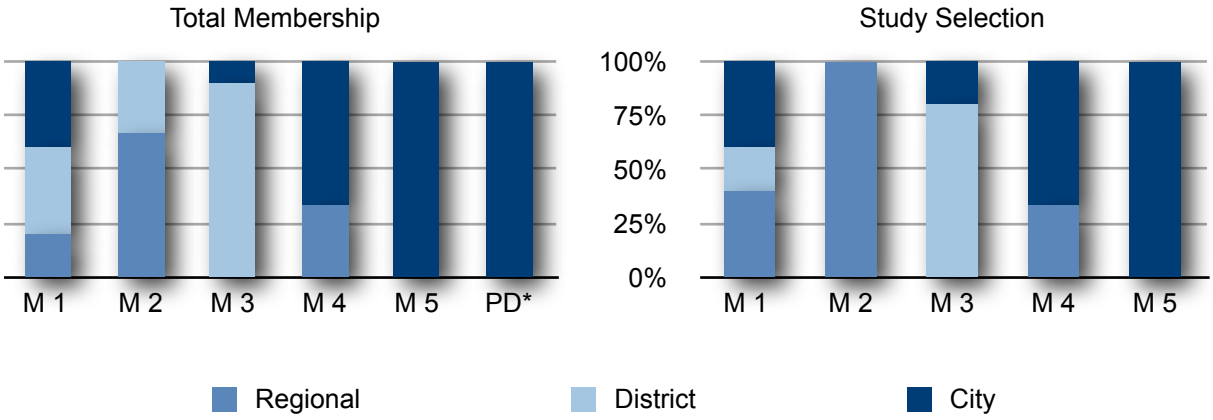
It was also important that the data represent all five milestones of the programme. Again, because of their enthusiasm and means, both from a personnel and financial perspective, city councils (Christchurch and Wellington City Councils) ultimately dominate the top two milestones in both the Total Membership and Study Selection, representing 67% and 100%

[294] See Appendix, Table 5.3, for data set.

[295] See Appendix, Table 5.3, for data set.

for Milestone 4 and Milestone 5 respectively. Given that Hutt City Council is not part of the Study Selection, Political Declaration is not represented in this research (Fig. 5.4).

Figure 5.4: CCP-NZ programme membership as a proportion of milestone (M) achievement[296]




Population and Location

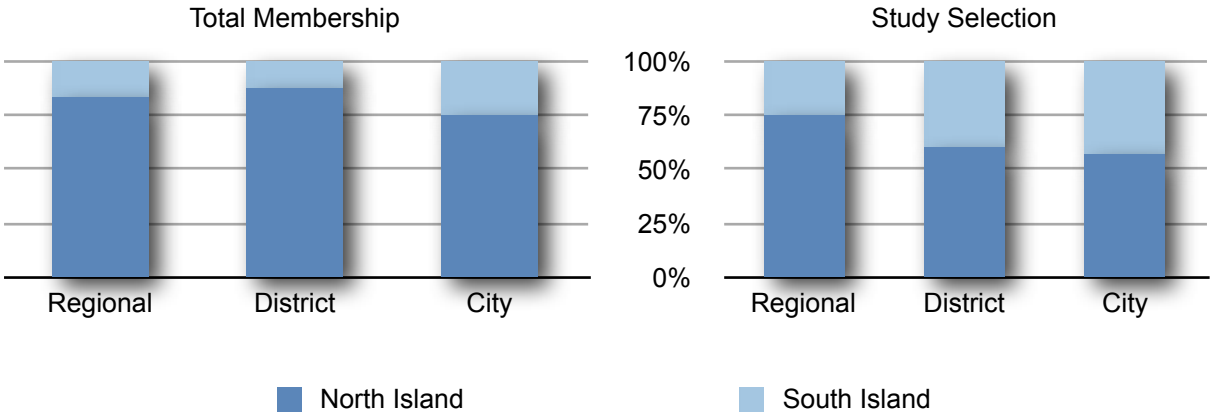
Within the Study Selection, as with the Total Membership, Kaikoura District Council (population 3,456) and Auckland Regional Council represent (population 1,237,239) the smallest and greatest population. Because of the weighted representation of city councils, the Study Selection includes a disproportionate number of large population centres relative to the Total Membership. The Study Selection does, however, represent a good cross-section of large-to-small councils against milestone achievement. For example, Kaikoura District Council, while being the smallest council by population, achieved Milestone 3 before the programme ended; Greater Wellington Region (population 434,034), on the other hand, while being one of the largest councils by population, only achieved Milestone 1 by the time the programme ended. Likewise, the Study Selection captures the narrative of mid-sized city councils such as Hamilton City Council (population 138,500) and Dunedin City Council (population 114,891), which achieved Milestone 4 and Milestone 1, respectively, by the time the programme ended.

Total Membership of the CCP-NZ Programme was heavily weighted towards North Island councils (82%). While the Study Selection was dominated by North Island councils (75%), the proportion was not as great as it was with the Total Membership (Fig. 5.5). Because of

[296] See Appendix, Table 5.3, for data set. * PD reefers to political declaration.

ease of access geographically (given that Christchurch was my base), all six South Island programme participants were included in the Study Selection.

Figure 5.5: CCP-NZ programme membership by council type, as a proportion of location[297]




The seven councils selected for S2 were chosen from among, and are considered a cross-section of, the 16 S1 councils (Appendix, Table 5.3). As with S1, S2 council selection was restricted by access to key senior managers responsible for the delivery of the CCP-NZ programme within respective councils; as time passed from programme termination, access to senior managers became increasingly difficult.

While not definitive, S2 council selection also considered such factors as the council's carbon dependency (corporate), its energy mix, primary industry and land use, and its commitment to achieving carbon neutrality.

**Case Study 2: CCP-NZ Programme - Programme Architects**

The programme architects chosen for this case study were selected because of their macro-level perspective and their role in either the creation or delivery of the CCP-NZ programme within NZ local government.[298] For example, the CCP-NZ National Programme Manager was selected for this study because of their role in coordinating the programme with NZ councils. The Manager was the key link between councils and ICLEI. The Director of ICLEI

[297] See Appendix, Table 5.3, for data set.

[298] While other individuals were involved in the CCP-NZ programme in some capacity, the three noted here were the main active figures involved in the programme.

Oceania,[299] CEO of ICLEI, was chosen for this study because of their macro-level perspective with regard to programme operation. The CCP-NZ initiative was predicated on the success of ICLEI's global CCP campaign. As a result, the Director was in a position to compare the effectiveness of the CCP-NZ programme against other iterations of the initiative from around the world. The liaison with Local Government New Zealand (Senior Policy Analyst) was selected for this study because of their role in supporting of the programme, and their ability to comment on the effectiveness of the CCP-NZ National Programme Manager and Director of ICLEI Oceania, in so far as it relates to the CCP-NZ programme.

It should be noted that attempts to meet with a representative from the Energy Efficiency and Conservation Authority and the Ministry for the Environment were unsuccessful (this was exacerbated by difficulty in determining who was in the role of liaison with the CCP-NZ programme!). Furthermore, attempts to meet with Nick Smith, Minister for the Environment and Climate Change Issues were also unsuccessful.[300]

## 5.5. RESEARCH EXECUTION

### 5.5.1. Initial Participant Contact

Initial participant recruitment for CS1 began in early June 2009; mid August 2009 for CS2.[301] As described in section 5.2, initial recruitment was in the form of an email which included an information brief detailing my objective as a researcher and the nature of the research (Appendix, Article 5.4; Article 5.5). Because of the termination of the CNPS and the CCP-NZ programmes, it was important to make contact with prospective interviewees quickly, as many were becoming disestablished in the near-term.[302]

Liamputtong (2011) suggests that the purposive selection of participants for their knowledge and unique experience gives the research credibility. With this in mind, perspective interviewees were purposively targeted for two primary reasons. The first target were managers responsible for the application and delivery of either the CNPS or the CCP-NZ

[299] As noted previously in Chapter 3, ICLEI Oceania was the arm of ICLEI through which the CCP-NZ programme was operated.

[300] As noted previously in Chapter 3, Nick Smith was the Minister responsible for terminating the CNPS programme.

[301] Though initial contact began in mid August 2009, some perspective interviewees were not reached until February 2010.

[302] Given that I began PhD studies on 01 June 2009, this required me to hit the ground running and move quickly on study design, thesis proposal approval, and importantly, ethics approval for interviews with human subjects. As Buchanan et al. (1988) note, researcher should adopt an opportunistic approach to fieldwork with organizations.

programmes in their respective organization (senior managers).[303] The second target were those that were either involved in championing/ creating the CNPS and the CCP-NZ programmes, or those that were responsible for liaising between the managers and the champions/ creators of the programmes (programme architects). In either case, interviewees sought for this research were targeted for their expertise and experience with either the CNPS or the CCP-NZ programmes. Myers & Newman (2007) caution that interviewing only senior officials may lead to elite bias. While this is likely true in many other studies, it is specifically the views and experience of the senior managers that I seek in this study (e.g. Carpenter & Suto, 2008).

While the study, in the end, included 33 interviewees, representing both case studies, 44 prospective interviewees were initially approached.[304] With the exception of 1 prospective interviewee,[305] while appreciating the merit of the research, others were unable to participate for reasons of availability and accessibility. Critically, the 33 interviewees that ultimately participated in the research, satisfied the need for cross-sectional organization representation (e.g. Liamputtong, 2011),[306] as described previously in section 5.4.2.

### 5.5.2. Interview Strategy

As an initial step in determining the interview strategy, and the qualitative research approach in general, I considered my role as researcher and the inevitable biases I bring to the research (e.g. Finlay, 2002).[307] As this was discussed in section 5.2,[308] I will not elaborate here, except to note that my earlier experience as an interviewer was not as an academic researcher but instead as a programme coordinator, in one instance seeking to better understand the

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[303] These senior managers often had titles that reflect the organization's appreciation (or at least awareness) for sustainability and energy conservation, i.e. Sustainability Manager, Energy Policy Manager, Climate Change Response Coordinator.

[304] Typical of qualitative research, the sampling process was flexible, and as a result the exact number of participants could not be determined in advance (e.g. Liamputtong, 2011).

[305] While several attempts were made to reach Nick Smith, the Minister for the Environment and Climate Change Issues, and the minister responsible for terminating the CNPS and the CCP-NZ programmes, all were unsuccessful.

[306] As cited in Liamputtong (2011, p.15), according to Mason (2002), the key question to ask when determining sample size is whether or not the sample provides enough data to effectively address the the research objectives.

[307] At the beginning of each interview I reminded the interviewee(s) that I was conducting this research in partial fulfillment of a PhD, funded through a New Zealand Royal Society Marsden Scholarship. At the end of the interview, as time permitted, I discussed my academic and professional background. This was done at the end of the interview, as opposed to the beginning, in order to avoid colouring the interviewees response to my questions. In terms of the overall thesis, however, my academic and professional background are both discussed at the beginning of this chapter, section 5.2, in order to identify how my biases may have influenced the research.

[308] As Hand (2003) notes, from a reflexive approach, it is important to identify the 'selves' present in the interview.

vulnerability of a quasi governmental organization to climate change,[309] and in another instance, seeking to gather participants for a professional training and integration initiative.[310] Moreover, while this experience involved many more interviewees than the current study, thus creating a level of comfort in an interview setting, preparing and strategizing in advance for the current study's interviews was a critical component of the research.

Pepper & Wildy (2009) liken the semi-structured interview, when well executed, to an art. Similarly, at the base of all qualitative interview strategies is the need to remain calm, organized, and prepared.[311] This latter point is particularly critical in semi-structured interviews as the very nature of a semi-structured interview is to allow the conversation to take its course and allow the interviewee the opportunity to tell their story (e.g. Feldman et al., 2004; Liamputtong, 2011, p. x).[312] And, in general, if the interviewer fails to remain calm and organized, the tone of the interview can become tense. The interviewee is likely to sense the interviewer's state of mind and react accordingly, potentially creating a positive feedback of discomfort which will influence the dialogue and affect the level of information the interviewee wishes to divulge.[313] Moreover, as noted by Myers & Newman (2007), the interview is an artificial situation that intrudes on the interviewee. Given that this intrusion may influence the behavior of the interviewee, a phenomena known as the Hawthorne Effect, and thus the results of the interview, it is important for the interviewer to be as respectful as possible.

In preparation for each interview I became extensively familiar with the organization and its association with the topic in question, and importantly, I became aware of the interviewees role within the organization. As for the former, I researched the organization's carbon profile, its commitment and actions on carbon mitigation, and its respective association with the

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[309] This particular effort required me to interview 20 Business Service Area senior managers within the largest conservation authority in Canada, in order to determine how their respective area, and ultimately the organization as a whole, will be affected by climate change. The end result of the effort was a comprehensive analysis of adaptive and mitigative efforts, identification of vulnerabilities, and recommendations for priority actions.

[310] This role required me to interview some 150 applicants for 30 positions. Interviews were structured and lasted approximately 60 minutes each, and occurred over a 7 week period. Applicants were professionals in either Planning, Engineering or Geoscience and had significant experience in their respective field.

[311] In Myers & Newman (2007) the authors describe how the qualitative interview is like a drama, and provide guidelines that interviewers should follow in order to have an excellent performance.

[312] As indicated in Feldman et al. (2004, p. 147-8), stories shed light on the decision making process; the narrative researcher is responsible for interpreting the story.

[313] Likewise, a more probing or direct approach to the interview would have created a different tone, perhaps causing the interviewee to feel challenged or threatened, which would also have influenced the information they chose to share.

programmes at the heart of this research. This background research allowed for a better understanding of the organization's vision, values, ethos and resolve with regard to climate change and carbon mitigation, thus fostering a more informed dialogue with the interviewee.[314]

Dialogue was further facilitated by well thought-out questions. Each interviewee was asked a similar set of questions (e.g. Bernard & Ryan, 2010; Pepper & Wildy, 2009) (Appendix, Article 5.8; Article 5.9; Article 5.10). In order to gain insight into the evolution of the CNPS and the CCP-NZ programmes, interview questions reflected elements of Termination Theory. More specifically, the questions, while semi-structured, were designed to allow the interviewee the opportunity to provide a window into their experience with the respective organization as it relates climate mitigation (namely as it relates to the CNPS and the CCP-NZ programmes, respectively). As cited in Myers & Newman (2006, p. 2-3), Rubin & Rubin (2005) suggest that the qualitative interview is like a pair of night goggles, 'permitting us to see that which is not ordinarily on view and examine that which is looked at but seldom seen' (see also Liamputtong, 2011; Soderberg, 2006).

As noted earlier, and recognizing that the interview may stress or pressure the interviewee (e.g. Myers & Newman, 2007), interview questions began general (broad and open-ended) and became more specific and probing as the interview progressed (e.g. Liamputtong, 2011). The purpose of this method is to create a sense of comfort with the discussion before moving into the potentially more difficult questions (e.g. Pepper & Wildy, 2009; Gertsen & Soderberg, 2011). This approach, particularly from a qualitative perspective, also allows the interviewee more freedom in telling their story.[315] Importantly, questions were generated with the understanding that the interview should remain a jointly constructed, fluid relationship between the interviewer and interviewee (Hand, 2003); as Soderberg (2006) and Gertsen & Soderberg (2011) suggest, the interviewer is a co-author of the narrative being

[314] Having read through many corporate documents (i.e. annual reports and plans, climate strategies etc.), I was in a better position to ask intelligent questions, and in certain instances appreciate the strained position of the interviewee. As mentioned earlier, many interviewees were facing imminent disestablishment, and this was foreshadowed in the content (or lack there of) of the texts I read in preparation for the interviews (i.e. lack of attention to climate change mitigation activities etc.). It was important to be aware of the interviewees role within the organization so as to ask appropriate questions, and moreover to ensure that they were indeed the correct interviewee for purpose of the study.

Since in the interview process, interviewees are relying on memory, it is possible that facts become blurred with memory reconstruction (e.g. Pepper & Wildy, 2009; Bernard & Ryan, 2010). Background reading can help to clarify this phenomena.

[315] As noted earlier, the ability of the interviewee to share their experience is a key tenant of qualitative research, without their narrative the research would lack rich content (e.g. Liamputtong, 2011).

told.[316] It should also be noted that while the interview questions were designed primarily to elicit conversation, some questions, despite qualitative research convention, were conceived with a dichotomous response in mind (Liamputtong, 2011).

Finally, in preparing for the interviews, it was important to be aware and consider the drawbacks of the semi-structured interview methodology. Recognition of the pitfalls of this approach allows the researcher to mitigate their occurrence, or at least makes efforts to minimize the influence on the research.[317]

### 5.5.3. Interview Execution

All interviews for this study took place face-to-face (Bernard & Ryan, 2010). It is important to note that while face-to-face interviews can be time consuming, unlike surveys which tend to be 'fragmented and decontextualized,' the narratives they elicit can provide access to rich personal experiences (Gertsen & Soderberg, 2011, p. 800).

Interviews with senior managers from the lead-core agencies involved in the CNPS programme took place in September 2009 (Wellington, NZ), while the interview with the programme architect responsible for the CNPS programme occurred in April 2010 (Manhattan, USA). Duration of the CNPS programme interviews varied from 38 minutes to 1 hour, 47 minutes (Table 5.4).[318]

[316] The interview is the result of the interviewer's initiative, the interview begins with the interviewer's question(s), the dialogue is influenced by the interviewer's comments (Gertsen & Soderberg (2011).

[317] Myers & Newman (2007) provide a descriptive account of the various 'problems and pitfalls' of the qualitative interview.

[318] Total interview time for the CNPS programme interviews is approximately 10 hours.

Table 5.4: CS1- interviews

| Ministry/ Department | Interviewee | Location | Date | Duration |
|---|---|---|---|---|
| Department of Conservation | Sustainability Manager | Wellington, NZ | Sept. 25, 2009 | 1h 47 min. |
| Inland Revenue Department | Sustainability Manager | Wellington, NZ | Sept. 22, 2009 | 1h 38 min. |
| Ministry of Economic Development | (A) Procurement and Sustainability Advisor<br>(B) Group Manager for Performance Governance and Assurance<br>(C) Manager of Facilities Management | Wellington, NZ | Sept. 24, 2009 | 60 min. |
| Ministry for the Environment | (A) Manager, Carbon Markets and Emissions Trading Group<br>(B) Senior Analyst | Wellington, NZ | Sept. 22, 2009 | 1h 07 min. |
| Ministry of Health | (A) Senior Advisor, Procurement and Contracts<br>(B) Project Leader, Procurement and Contracts | Wellington, NZ | Sept. 25, 2009 | 55 min. |
| Treasury | Facilities Manager, Sustainability Manager | Wellington, NZ | Sept. 24, 2009 | 60 min. |
| **Programme Architect** | | | | |
| Helen Clark | Former Prime Minister (Labour), programme champion | Manhattan, USA | April 6, 2010 | 38 min. |

Interviews with senior managers from the CCP-NZ programme member-councils took place throughout NZ and occurred in two stages, with the first stage, S1, occurring in January and February 2010, and the stage second, S2, occurring in February 2011, one year following the first stage of interviews. Interviews with the programme architects involved with the CCP-NZ programme occurred in February 2010 (Wellington, NZ), July 2010 (Melbourne, Australia) and July 2011 (Wellington, NZ). The CCP-NZ programme interviews lasted between 32 minutes and 1 hour, 21 minutes (Table 5.5 and Table 5.6).[319]

[319] Total interview time for the CCP-NZ Programme interviews is approximately 30 hours.

Table 5.5: CS2 S1 - interviews

| Council | | Interviewee | Location | Date | Duration |
|---|---|---|---|---|---|
| Regional Council | Auckland | (A) Project Leader, Sustainability<br>(B) Senior Policy Analyst, Corporate Sustainability Manager | Auckland, NZ | Feb. 23, 2010 | 1h 05 min. |
| | Environment Canterbury | Energy Policy Analyst | Christchurch, NZ | Jan. 11, 2010 | 44 min. |
| | Greater Wellington | Regional Climate Response Coordinator | Wellington, NZ | Feb. 8, 2010 | 1h 21 min. |
| | Hawke's Bay | Group Manager Assets Management | Napier, NZ | Feb. 15, 2010 | 55 min. |
| District Council | Far North | Senior Planner | Kerikeri, NZ | Feb. 26, 2010 | 32 min. |
| | Kaikoura | (A) District Planner<br>(B) District Planner | Kaikoura, NZ | Feb. 3, 2010 | 52 min. |
| | Kapiti Coast | Senior Advisor, Climate Change and Energy | Paraparaumu, NZ | Feb. 11, 2010 | 56 min. |
| | Rotorua | Business Manager | Rotorua, NZ | Feb. 16, 2010 | 1h 05 min. |
| | Southland | Assistant Corporate Planner | Invercargill, NZ | Jan. 25, 2010 | 47 min. |
| City Council | Auckland | Senior Sustainability Policy Analyst | Auckland, NZ | Feb. 23, 2010 | 55 min. |
| | Christchurch | Principal Advisor, Sustainability | Christchurch, NZ | June 22, 2010 | 1h 20 min. |
| | Dunedin | Energy Manager | Dunedin, NZ | Jan. 27, 2010 | 1h 14 min. |
| | Hamilton | Energy Manager | Hamilton, NZ | Feb. 18, 2010 | 1h 4 min. |
| | Nelson | Senior Policy Planner | Nelson, NZ | Feb. 5, 2010 | 53 min. |
| | Waitakere | Energy Manager | Henderson, NZ | Feb. 24, 2010 | 45 min. |
| | Wellington | Senior Advisor | Wellington, NZ | Feb. 11, 2010 | 54 min. |
| **Programme Architects** | | | | | |
| ICLEI | | (A) CCP-NZ National Programme Manager | Wellington, NZ | Feb. 12, 2010 | 54 min |
| | | (B) CEO ICLEI, Director ICLEI Oceania | Melbourne, Australia | Jul. 6, 2010 | 1h 27min |
| Local Government New Zealand | | Senior Policy Analyst | Wellington, NZ | Jul. 22, 2011 | 56 min |

Table 5.6: CS2 S2 - interviews

| Council | | Interviewee | Location | Date | Duration |
|---|---|---|---|---|---|
| Regional Council | Auckland | Senior Policy Analyst, Corporate Sustainability Manager | Auckland, NZ | Feb. 28, 2011 | 56 min. |
| | Greater Wellington | Regional Climate Response Coordinator | Wellington, NZ | Feb. 22, 2011 | 57 min. |
| District Council | Rotorua | Business Manager | Rotorua, NZ | Feb. 24, 2011 | 54 min. |
| | Southland | Assistant Corporate Planner | Invercargill, NZ | Feb. 9, 2011 | 43 min. |
| City Council | Dunedin | Energy Manager | Dunedin, NZ | Feb. 8, 2011 | 57 min. |
| | Nelson | Senior Policy Planner | Nelson, NZ | Feb. 15, 2011 | 1h 6 min. |
| | Wellington | Senior Advisor | Wellington, NZ | Feb. 17, 2011 | 56 min. |

With two exceptions, all interviews took place in either the interviewee's office or a private conference room.[320] In all instances, the environment was comfortable and non-threatening to both interviewees and researcher alike; interruptions did not occur.[321] The majority of interviews involved only one interviewee, but some did involve two or more interviewees.

[320] Two interviews took place in coffee houses. While these locations were not as quiet as a private office or conference room, they nevertheless did serve their purpose.

[321] These details are for the benefit of the reader, to provide authenticity and context - a feeling for the field setting (e.g. Brower et al., 2000).

Interviews were recorded with a digital recorder, and the subsequent transcripts were later returned to the interviewees for their approval.[322] Participants were afforded the opportunity to clarify and modify their statements if they felt it necessary. It was important that the interviewee had the opportunity to check and ensure that the narrative did in fact represent their experience. Horsburgh (2002) notes that this process may be problematic, given that the researcher and interviewee have different agendas and perspectives. Given the ambiguity of language and resultant interpretation of questions, this process is important because it allows the opportunity for clarification (Myers & Newman, 2007); while at the time the researcher may understand the gist of what the interviewee is saying, following transcription, the meaning may be difficult to decipher (e.g. Feldman et al., 2004). This feedback process also serves to increase the rigor and validity of the study (e.g. Liamputtong, 2011; Polkinghorne, 2007).

Though some interviewees identified areas that they would prefer remained absent, or that they felt misrepresented themselves or their organization (e.g. Buchanan et al., 1988), the majority of interviewees signed off on the transcript without alteration. In any event, the minor alterations that did occur had no significant bearing on the research, and in the end all transcripts were approved.

## 5.6. RESEARCH METHODOLOGY AND INTERPRETATION

### 5.6.1. Narrative Analysis

Narrative analysis is a subfield of discourse analysis, and has wide application in scholarly research, including organizational studies (e.g. Bebbington, 2009; Bailey, 2007; Boykoff et al., 2007; Feldman, 2004), where over the past 20 years, according to Gertsen & Soderberg (2011, p. 788-9), has built a strong reputation. Watson (2009, p. 427) echoes this notion, indicating that "narratives and stories are increasingly being seen as relevant material for social scientific analysis."

As Bernard & Ryan (2010) explain, within qualitative research, there are four main 'traditions' of narrative analysis: (1) Sociolinguistics, which focuses on the structure of the

[322] Interviewees were provided with unsanitized copies of the transcript. Buchanan et al. (1988) describe the process of sanitizing the data as clearing the clutter before allowing the interviewees the chance to check the accuracy of the transcript. Because of time constraints, interviewees will not have the opportunity to see the sanitized data until it appears in the Thesis.

narratives; (2) Hermeneutics, which explores the greater meaning of narratives (3) Phenomenology, which employs narratives to understand a lived experience of an individual; and, (4) Grounded Theory, which uses narratives to better understand how things work.

Phenomenological narrative analysis was chosen for this study because it allows for an exploration of the experience of the managers responsible the delivery and application of the CNPS and the CCP-NZ programmes.[323] As Feldman et al. (2004, p. 148) suggest, narratives are particularly useful data because individuals make sense of the world through narratives; when an individual shares their story, they reflect an experience (see also Liamputtong, 2011), creating meaning (Soin & Scheytt, 2006). And according to Watson (2009), unlike facts, narratives can speak for themselves. Through analysis of narratives, or stories, a better understanding of the individuals' experience can be achieved; as Kleres (2011, p. 183) explains, "people have specific narrative knowledge - the knowledge of how things have come about..." From an organizational perspective, narratives reflect the cultural context of an experience, providing insight into the character of the organization itself (e.g. Soin & Scheytt, 2006).[324] Or as Soderberg (2006, p. 397) puts it, "a narrative analysis focuses on interviewees" story-work and how it constitutes organizational reality. Narrative analysis is therefore an ideal approach to better understand the effectiveness of the CNPS and the CCP-NZ programmes within their respective organization (e.g. Polkinghorne, 2007).

Ultimately, narratives are not fact (e.g. Soderberg, 2006). As Watson (2009, p. 448) concedes, "to a certain extent a story is a story is a story, so to speak." And as Soderberg (2006) warns, there is an inherent risk of interpreting narratives as fact about an organization or event. Another potential limitation of narrative inquiry, as Soderberg (2006) notes, relates to the interviewee's need, whether conscious or subconscious, to demonstrate their authority and intelligence. And, likewise, the interviewee may purposely present themselves in such a way that their emotions, be it anger, frustration etc., appear "worthy of the audience's empathy," as described by Soderberg (2006, p. 401).

[323] While phenomenological analysis is the primary method of interpretation, it is difficult to separate it from hermeneutics analysis, and as a result either directly or indirectly, this study explores the greater meaning of the narratives well.

[324] Soin & Scheytt (2006) also suggest that narratives assist in sense making in organizations.

While these often taken for granted risks can be mitigated by treating the narratives as the interviewees' retrospective interpretation or sense making, it is important to remain aware of the interviewees context relative to their narrative. To mitigate this risk further yet, the research should include multiple interviewees and/ or multiple case studies, and extensive background reading about the organization (as is the case for this study). This will allow the researcher to triangulate the findings, and thus increase the credibility of the study (e.g. Soin & Scheytt, 2006). And importantly, as cautioned by Soin & Scheytt (2006), narrative analysis, like all qualitative inquiry, runs the risk of being influenced by the researcher's theoretical and conceptual assumptions. Though a reflexive research design can lessen this risk, it is critical that the researcher continuously check their assumptions, and ensure that they are indeed following the data.

While narrative analysis of the senior manager interview transcripts is the primary method of analysis used in this study (with the transcripts being the primary data), word count analysis is used on CS2 S2 Council strategic reports to triangulate findings.[325] As noted by Leech & Onwuegbuzie (2007), the assumption associated with word count analysis is that the more frequent the word(s) is used, the greater the importance the word represents within the text (see also Bernard & Ryan, 2010). In order to increase the validity of this assumption, the analysis must also include a count of the total words in the text, so as to consider the target word(s) in the larger context. For the purpose of this study, I am only concerned with whether the key words are mentioned in the documents (yes or no), which in this case are strategic reports used by Council to forecast and account for progress and activities throughout the year.

### 5.6.2. Theme Development

Transcripts resulting from the semi-structured interviews with the senior managers were transcribed verbatim[326] then manually coded and studied to discover emerging themes. In light of the objectives of this study, themes emerging from the data are examined to determine the rationale for programme termination and the resolve of government

[325] Word count analysis was done using Adobe PDF reader's search application.

[326] The interviews were transcribed by the Centre for Evaluation & Monitoring (CEM-NZ), who provide professional and confidential transcribing services; CEM is located at the University of Canterbury. While there is substantial benefit in transcribing transcripts yourself (Liamputtong, 2011), for reasons of time constraint, I opted to have the transcripts professionally transcribed. In this case, I don't believe that this has negatively impacted the research.

Transcripts amounted to over 800 pages (33 interviews x average of 25 pages per transcript), every line, of text.

organizations to continue efforts for carbon mitigation.[327] In addition, as Termination Theory is the theoretical lens through which the data is assessed, themes are explored to determine whether the cancelling of the CNPS and the CCP-NZ programmes aligns with deLeon's rationale for programme termination, as described in Chapter 4. While theory did influence the development of the semi-structured interview questions, new themes did emerge from the data.

Given that the interviews occurred over an extended period of time, preliminary analysis of the interview transcripts began immediately following transcription. This analysis also included review of interview and field notes. While the purpose of this assessment was purely exploratory, and prelude to more in-depth attention once all the interviews were complete, it nonetheless provided initial insight for theme development. The inclusion of interview and field notes in this process, as described by Ryan & Bernard (2003), also served to ensure continuity with the transcript data.

Once all the transcripts had been transcribed, and before primary data analysis occurred, CS1 data was separated from CS2 data; likewise, with regard to CS2, S1 data was separated from S2 data. While the resultant data from both case studies and both stages will be reunited, at this point, and in order to maintain the integrity of the respective case study, each case study is assessed in isolation.

Narrative analysis began with a quick reading of the transcripts (Step 1) (Table 5.7). Doing this for all the transcripts provided a sense of tone and context; this also allowed for improved recollection, which aided in the initial identification of similarities and themes between the transcripts. Following, each transcript was reread, slowly, so as to really appreciate the narrative and understand the stories held within each transcript (Feldman et al., 2004) (Step 2). Key quotations were highlighted using different colours to represent themes (e.g. Ryan & Bernard, 2003).[328] As noted by Coffey & Atkinson (1996), in spite of the open-ended nature of the semi-structured interview questions, the initial themes tend to emerge

[327] This form of analysis is known as thematic analysis or interpretive thematic analysis, and according to Liamputtong (2011, p. 284), is the "foundational method for qualitative analysis" (see also Ryan & Bernard, 2003).

[328] The challenge of selecting effective quotes, as Bernard & Ryan (2010, p. 260) describe, is to 'achieve empathic understanding of the phenomenon being studied.'

from the interview protocol. With that said, however, Dey (1993) notes that because of the open-ended nature of the semi-structured interview questions, all themes cannot be anticipated in advance of data analysis.

The third step involved rendering the themes within each transcript. For each transcript, this involved cutting, pasting and gathering highlighted quotations onto a separate page(s), organised by colour-code (e.g. Ryan & Bernard, 2003; Bernard & Ryan, 2010). Themes were then distilled down to those common within the respective case study and stage (e.g. Pepper & Wildy, 2009) (Step 4). Ultimately, within CS1, 5 primary themes were identified; within CS2 S1, 7 primary themes were identified; and, within CS2 S2, 6 primary themes were identified. As themes were culled, sub-themes were identified.

At this point, each theme was given a colour-coded page(s), quotations from each organization that reflect that theme were cut and pasted onto the corresponding colour-coded page(s) (Step 5). This was done for each case study and stage. For example, CS1, 5 individually colour-coded pages were created, representing the 5 primary themes identified in Step 4. Quotations from each of the 6 transcripts (organizations) were cut and pasted onto the corresponding colour-coded theme page(s).[329] And finally, each case study was summarised (Step 6). While the findings write-up is not meant to be an exhaustive account of all the quotations from the transcripts, it pulls together the most appropriate quotations to articulate a narrative which conveys the interviewees story through the common themes identified in Step 4 & 5 (e.g. Pepper & Wildy, 2009; Malterud, 2001).

Of critical importance, as noted by Pepper & Wildy (2009, p. 23), was to document the theme development process, so as to ensure that what is "claimed to be analysed is being analysed;" transparency serves to improve the validity of the researcher's approach (Ryan & Bernard, 2003; Feldman et al., 2004; Polkinghorne, 2007). Subsequent actions involved comparing the findings from CS1 to CS2, and ultimately considering the findings in the context of Termination Theory.

[329] For CS2 S1, 7 individually colour-coded pages were created and quotations from each of the 16 transcripts (organizations) were cut and pasted onto the corresponding colour-coded theme page(s); and, for CS2 S2, 6 individually colour-coded pages were created and quotations from each of the 7 transcripts (organizations) were cut and pasted onto the corresponding colour-coded theme page(s).

Table 5.7: Steps to narrative analysis

| Step | Description |
|---|---|
| 1 | Quick reading of all the transcripts (33) |
| 2 | Detailed reading and highlighting of transcripts |
| 3 | Render themes within each transcript |
| 4 | Determine common themes within each case study |
| 5 | Re-organise by theme, drawing examples from each transcript |
| 6 | Summarize findings from each case study |

### 5.6.3. Application of Termination Theory

Direct application of theory was held off until after theme development occurred to avoid too heavy a reliance on prior theorising, which as Charmaz (1990) argues, can limit the development of new ideas. Avoiding theory, on the other hand, as Ryan & Bernard (2003) caution, can result in the failure to make connections between the data and the research objective. This approach, along with reflexive considerations, lessened the likelihood of simply finding what I was looking for in the data, instead of following the data (e.g. Ryan & Bernard, 2003; Coffey & Atkinson, 1996).

In this study, while application of Termination Theory occurred after theme development, it did play an initial role in influencing the development of the semi-structured interview questions, as illustrated by themes below (see Appendix, Article 5.8, Article 5.9; Article 5.10):

Inception: Why were the CNPS and the CCP-NZ programmes created?

- Why did departments and councils join the respective programmes?
- How did departments and councils make sense of the climate change discourse?
- What were the departments and councils drivers and motivations for action on carbon neutrality?
- What were departments and councils expectations and goals?

Application: How effective were the CNPS and the CCP-NZ programmes?

- How did expectations and goals compare to the actual experience?
- How economic, efficient and effective (operationally) were the respective
- programmes at achieving goal?

Termination: Why were the CNPS and the CCP-NZ programmes terminated?

- How were programme economics, efficiency and effectiveness evaluated?
- Does government no longer believe in the need to manage carbon?
- Did termination meet resistance from programme supporters?

Next Steps: Will future iterations of the CNPS and the CCP-NZ programmes be created?

- What will departments and councils do next - has the ethos of these programmes become business as usual?
- Will departments and councils continue with or without the assistance and leadership of central government?

Considering the data through this lens will shed light on the rationale(s) for termination of the CNPS and the CCP-NZ programmes, and aid in the determination of whether the termination of these two programmes aligns with deLeon's rationales for programme termination: (1) Economics; (2) Programmatic inefficiencies; and, (3) Political ideology.

## 5.7. SUMMARY AND LOCATING THE RESEARCH

### 5.7.1. Summary of Chapter 5

Narrative analysis was chosen for this qualitative study because it allows the researcher to explore meaning and interpretations, a window into individual experiences. Analysis of this data, in the context of Termination Theory, in turn provides insight into the dynamics leading to the termination of the CNPS and the CCP-NZ programmes and ultimately organizational resolve towards carbon management and carbon neutrality.

In order to address positivist criticism of qualitative research, along with continual reflexive considerations throughout the research process, this study maintained a level of ethical standard supported by the University of Canterbury's Human Ethics Committee.

From a design perspective, this study included two distinct case studies, CS1 (CNPS programme); and CS2 (CCP-NZ programme). Each case study included semi-structured interviews with senior managers responsible for the application and delivery of the CNPS and the CCP-NZ programmes in their respective organization. Each case study also included semi-structured interviews with the programme architects that were involved in the creation

and macro level delivery of the respective programme. In total, 33 interviewees participated in the research. In order to increase the rigor and validity of the study, interview transcripts were returned to the interviewees for their approval.

### 5.7.2. Locating the Research

As Feldman (2004, p. 167) contends, "interpretive social science is an important part of the scholarly repertoire... It is particularly useful in helping us understand the processes that social actors engage in to make sense of their reality and to guide actions." By exploring the the narratives of public sector managers involved in the CNPS and the CCP-NZ programmes, this research seeks to contribute to the growing body of qualitative methodological literature that explores organizational climate mitigation. Insights gained from this study will aid in the understanding of NZ public sector organizational resolve towards carbon management and carbon neutrality, and future NZ Government policy on climate change in general.

# CHAPTER 6 - FINDINGS I: CASE STUDIES

## 6.1. INTRODUCTION

### 6.1.1. Introduction to Chapter 6

The data resulting from the interviews with senior managers from organizations involved in the CNPS and the CCP-NZ programmes, respectively, reveal a similar experience across the case studies. While themes vary slightly between case studies, a common thread does present. This is in part, perhaps, a result of the theory's influence on interview question development. The similarity is also likely because of the fact that all organizations involved in this study are public sector organizations and thus share a similar mandate and ethos - that is, as Broadbent & Guthrie (1992, p. 3) suggest, to "provide utilities and services to the community and which have traditionally been seen as essential to the fabric of our society."[330] While this will be discussed further in Chapter 8, here the themes of each case study (and stage) are presented. It is important to note, as mentioned in Chapter 5, that the themes presented here are not an exhaustive representation of the themes that emerged from the transcripts, but instead depict the themes common to all organizations from the respective case study (and respective stage). Additionally, some of the themes are supported by sub-themes, and it is within the sub-themes that the differences between the case studies become more clear.

Narrative analysis of CS1 (6 organizations) reveals five dominant themes: (1) Support, which discusses how well the programme was supported; (2) Application, which explores the operational efficiency of the programme; (3) Termination, which explores the ultimate cause of programme termination; (4) Outcome, which considers the results of the programme; and, (5) Moving Forward, which presents agencies' next steps. Table 5.4 (Chapter 5) serves as a reference, linking the interviewee to the lead-core agency interviewed for CS1.

Narrative analysis of CS2 S1 (16 organizations) reveals seven dominant themes: (1) In the Beginning, which explores council rationale for joining the programme; (2) Support, which discusses leadership and engagement; (3) Application, which explores delivery and operational efficiency of the programme; (4) Termination, which presents what interviewees

[330] Ball et al. (forthcoming) go on to explain that there is a distinct difference between public and private sector organizations, particularly when it comes to the responsibilities they have been asked to assume vis-a-vis sustainability (see the NZ Local Government Act 2002, for example). Additionally, it is argued that public sector work attracts employees that are more ethically motivated (e.g. Delfgaauw & Dur, 2008; Taylor, 2010), as opposed to the private sector where employees typically are driven by economic prosperity (Boyne, 2002).

believed to be the ultimate cause of programme termination; (5) Outcome, which explores the effectiveness of the programme; (6) Final Thoughts, which considers participants' overall thoughts about the programme; and, (7) Moving Forward, which explores next steps. Table 5.5 (Chapter 5) serves as a reference, linking the interviewee to the council interviewed for CS2 S1.

Narrative analysis of CS2 S2 (7 organizations) reveals six dominant themes: (1) In the Beginning, which explores the early stages the programme; (2) Support, which considers stakeholder engagement with programme participants; (3) Application, which explores the programme's methodology (4) Outcome, which presents the results of the programme; (5) Final Thoughts and Membership Fee, which discusses the programme's greatest influence on councils and councils' willingness to fund the programme in the absence of the Ministry for the Environment's assistance; and, (6) Moving Forward, which explores councils' next steps. Table 5.6 (Chapter 5) serves as a reference, linking the interviewee to the council interviewed for CS2 S2.

And finally, word count analysis of Annual Reports, LTCCPs and Annual Plans for CS2 S2 organizations demonstrates council use of five key climate change and climate change mitigation related words within these strategic reports.

### 6.1.2. Chapter Purpose and Outline

The purpose of this chapter is to present the findings resulting from the semi-structured interviews for CS1, CS2 S1, and CS2 S2, as well as the findings resulting from word count analysis of CS2 S2 council reports. Though this is not strictly an analytical or interpretive chapter (that will follow in Chapters 7 and 8), the chapter nevertheless attempts to presents the findings as a descriptive and coherent narrative.

This chapter is divided into six primary sections, (6.1) Introduction, (6.2) CS1 - Themes, (6.3) CS2 S1 - Themes, (6.4) CS2 S2 - Themes, (6.5) CS2 S2 - Word Count Analysis Results, and (6.6) Summary and Locating the Research. Section 6.1 begins the chapter with a quick account of the dominant themes present within each case study (and within each stage). Sections 6.2 through 6.4 discuss the respective case study and stage in greater detail,

including the presentation of sub-themes. Section 5 discusses the findings resulting from word count analysis of CS2 S2 council Annual Reports, LTCCPs and Annual Plans. For clarity, sections 6.2 through 6.5 conclude with a brief summary. And, in the final section, section 6.6, in addition to providing an aggregated summary of the previous five sections, the research findings are located within the thesis.

## 6.2. CS1 - THEMES

### 6.2.1. Support

**Senior Management Leadership**

Despite the fact the CNPS programme was championed by the Prime Minister, and expected to have strong senior management leadership, the research suggested that the consensus among the lead-core agencies is that leadership was lacking, with only one of the six agencies indicating that leadership did indeed exist (Appendix, Table 6.1).

While initially the lead-core agencies were excited, given that the mandate was "coming out from the Prime Minister as champion" (Table 5.4, Ministry for Economic Development C), and despite "chief executives in government departments [being] quite strongly directed to take responsibility for this stuff [(climate issues)]" (Table 5.4, Ministry for the Environment B), it became apparent that at a "senior level within organizations there was a lot of lip service paid to it" (Table 5.4, Treasury).

Moreover, many managers, given their agency's core business, failed to embrace the leading by doing nature of the programme. This was particularly the case for the Inland Revenue Department:

> This is not core business or seen as core business at Inland Revenue. These are the people who do not see this stuff as something important, they do not get the understanding that actually means that you guys actually are meant to take action yourself to show everybody else that you can do it (Table 5.4, Inland Revenue Department).

In hindsight, the lead-core agencies reasoned that CNPS would have been more successful had it been a grass-roots initiative, as expressed by Ministry of Health A (Table 5.4): "I think

one of the fundamental flaws in the Carbon Neutral Programme is [that government] started it from the wrong direction. They started it from the top down."

### 6.2.2. Application

**Delivery**

Consistently across all six lead-core agencies, the interview data indicated that the programme was considered to have been poorly delivered (Appendix, Table 6.2). There were three main reasons for this conclusion: First, according to the Ministry for the Environment, the programme was developed and launched in haste:

> I think one of the things that is worth noting is that the Carbon Neutral Public Service Programme was set up really, really quickly. And it was an idea that was developed over a short period of time at the beginning of 2008 in time for a Prime Minister's speech from the throne essentially (Table 5.4, Ministry for the Environment B).

Though the Ministry for the Environment conceded that the expectation was that the programme would evolve as the lead-core agencies moved forward with inventory development, other agencies characterised the programme in a less kind light, with the Treasury (Table 5.4) suggesting that the CNPS programme "was all sort of 'make it up' as you go along."

Intensified by the quick development and launch, the second rationale for poor programme delivery concerned the emphasis on measurements:

> The difficult thing about CNPS and one of the challenging things about it is that you end up getting into a measurement mindset, which means that you forget about what you are doing and you just look at the numbers. And so you forget about the idea of actually we are trying to do this for the greater good of the planet (Table 5.4, Inland Revenue Department).

The third, and perhaps most important rationale related to the Ministry for the Environment's ability to deliver the programme (requested by the Prime Minister's office):

> It was something that the Prime Minister's office requested from the MFE… because the MFE had the expertise – the MFE were the logical people (Table 5.4, Ministry for the Environment B).

Despite their expertise, the Ministry for the Environment indicated that it was difficult to both deliver and participate in the programme; Ministry for the Environment A (Table 5.4), confessed that "it actually would have been easier in some ways if we had not been one of the six pilot groups." Ultimately, as Department of Conservation (Table 5.4) explained "CNPS should never have been run by MFE, MFE is a policy department. It should have been run by EECA [(Energy Efficiency and Conservation Authority)]. EECA offered to run it."[331] Given that EECA is the NZ government agency tasked with the promotion of energy conservation and improving energy efficiency within NZ homes and businesses, perhaps this assertion is valid.

**Operating Budget**

Despite programme funding in the order of $10.4 million gross over three years, operating costs were pushed onto the lead-core agencies, as indicated by three of the six agencies (Appendix, Table 6.2). While "most of [the $10.4 million] got distributed at MFE's discretion towards offsetting the cost of audits – for initial audits and setups" (Table 5.4, Ministry of Health B), according to Ministry for the Environment B (Table 5.4), "all of the staff resources were essentially out of baseline." This caught the lead-core agencies off guard as they were not expecting to absorb programme costs:

> Our biggest problem was that the Ministry was not prepared – there was no budget at all. There was absolutely no budget for any of this (Table 5.4, Ministry of Health A).
>
> The government imposed this on us with no additional resources… I had envisaged that [central government funding] would be spent on… helping to do work place travel plans – a whole range of things to actually help us to you know identify cost effective ways of reducing our emissions (Table 5.4, Department of Conservation).

**Methodology (Data Requirements)**

Many staff across the lead-core agencies were excited about the programme, but there was concern with regard to the onerous nature of validation and auditing requirements. Three of the six lead-core agencies suggested that data requirements and scope were inconsistent from

[331] EECA also encourages the use of renewable energy sources in NZ.

the onset of the programme (Appendix, Table 6.2), as is evident from Ministry for Economic Development A (Table 5.4):

> The Ministry for the Environment] would change what we were measuring [(i.e. whether flights were considered trans-Tasman, international or national)]. Stuff that they would often think about after we had our contracts in place.

Frustrating the process further, the inconsistencies exacerbated the base task of data gathering, particularly for multi-tenanted and non-government owned buildings. Ministry of Health A (Table 5.4) echoed this sentiment and added that maintaining data quality was also a challenge given that "lots of data [was] missing; people had not collected stuff properly, lack of understanding with people collecting the data."

Similarly, the conversion factors provided by the Ministry for the Environment were also inconsistent, as explained by Treasury (Table 5.4):

> I think that it got to the stage of submitting material and then getting it thrown back and saying, "Your conversion factors are all wrong because we gave you the wrong conversion factor. Please redo it again."

**Formal Benchmarking**

Across all six lead-core agencies, no formal benchmarking occurred (Appendix, Table 6.2). The Ministry for the Environment suggested that no other public sector organization was working towards achieving carbon neutrality, so there was no one to benchmark against. In the absence of formal benchmarking, four of the lead-core agencies took it upon themselves to establish benchmarks, be it from the private sector or, as in the case of the Treasury, interdepartmentally within the lead-core agencies. But as Treasury (Table 5.4) pointed out, "no international best practice or mark was ever made available to us," so no international benchmark was established. Ultimately, two of the lead-core agencies did not benchmark at all.

### 6.2.3. Termination

**Rationale**

Given the political climate following the Government's transition from Labour to National, the consensus among the lead-core agencies was not that of surprise with regard to the termination of the CNPS programme. Five of the six lead-core agencies believed that programme termination was politically motivated (Appendix, Table 6.3); Ministry for the Environment B (Table 5.4) explained that the CNPS programme did not resonate as a priority for the new National-led Government. Moreover, as Department of Conservation (Table 5.4) indicated:

> [National] knew that sustainability had been one of Helen Clarke's showcases and as she said, "Through vindictiveness they have terminated it." So yes, clearly it was I think politically motivated. Clearly [National] do not see climate change as a serious threat. It is ideology.

In addition to political ideology, an economic imperative for programme termination was indicated as well, as suggested by Treasury (Table 5.4): "I am guessing that our gut feel was cost, central government did not see the value for the money." Along this line, Ministry of Health A (Table 5.4) explained that programme termination related to onerous cost associated with achieving carbon neutrality:

> The country does not have the money to support offsetting all the public sector's carbon emissions. The big thing I guess going back to carbon neutral by 2012, is the fact that to offset it, it was going to cost around $300,000 - $400,000 a year. Treasury were very much painting a gloom and doom picture around 2012-2015 time economically.

According to the Climate Change Issues and Environment Minister Nick Smith, the initiatives involved in the CNPS should occur without requiring a costly programme:

> [The Minister's] view was that a lot of the initiatives – you know, the good cost benefit initiatives that were being undertaken in the Carbon Neutral Public Service could easily be undertaken – should be undertaken by government departments anyway (Table 5.4, Ministry for the Environment B).

In contrast with the Minister's belief however, the Ministry for the Environment were of the opinion that without the CNPS programme, these initiatives would not have occurred:

> I think that the key point behind that was that the Minister's understanding that CNPS would happen anyway because it is a good idea. That is not the case (Table 5.4, Ministry for the Environment A).

Ultimately, there did exist an underlying dislike of the programme prior to the shift in Government:

> I think that the Minister [(Smith)] had been explicit in his dislike of the programme when he was in opposition and the communication that he did not believe that it was necessary to have this programme… so it was not a complete surprise (Table 5.4, Ministry for the Environment A).

**Opposition to Termination**

Five of the six lead-core agencies believed that the Ministry for the Environment, in particular, actively opposed the decision to terminate the programme (Appendix, Table 6.3):

> [The Ministry for the Environment] put some thoughts together about the success of the programme and then tried to get that in front of the Minister. My understanding is that it did not get looked at (Table 5.4, Ministry for Economic Development A).

In spite of this belief, however, Ministry for the Environment A (Table 5.4) revealed that it is not the role of the Ministry for the Environment to oppose Government decisions:

> It is not our job as officials to fight …when there is a new government, they quickly move – they change gear to align themselves with the new government. It is their job to support the government.

Moreover, following the dismantling of the programme, there was a sense of relief among the lead-core agencies, particularly with regard to the compliance reporting component of the programme (Table 5.4, Treasury).

Interestingly, the data also suggested that the public were not as aware of the programme as they could have been, "[the public] did not know before and they probably do not know now" (Table 5.4, Ministry of Health B), which may have played a role in easing programme termination:

> Well, one of the things that I thought that they did not do very well was to sell it. So I think that there were not a lot of people out in the public who actually understood what we were doing. It was very hidden. There probably was not a large public support base there which is why they probably felt comfortable axing it (Table 5.4, Department of Conservation).

**Evaluation**

The interview data indicated that no formal evaluation of the programmes' environmental and/ or economic effectiveness occurred prior to its termination, as suggested by five of the six lead-core agencies (Appendix, Table 6.3). As Department of Conservation (Table 5.4) indicated, the decision to terminate was too quick to allow for an adequate evaluation of the programme:

> No – it was done so fast - basically MFE had virtually no time. They were given about a month to try to justify its survival. We showed all the savings, which were quite significant for the investment. Despite all the flaws of the programme, it was starting to deliver and I do not think that it would have mattered what we put up, a decision had been made.

### 6.2.4. Outcome

**Awareness**

As a result of the CNPS programme, management's level of awareness with regard to how carbon affects the operation of their department increased. This observation is consistent across all six lead-core agencies (Appendix, Table 6.4): "Created an awareness – absolutely. Awareness at senior level is a huge redefinition of management practices" (Table 5.4, Ministry for the Environment A).

In particular, as Inland Revenue Department (Table 5.4) indicated, the CNPS programme drove the need for information about business operations, it fostered a need to better understand the relationship between information, efficiency and cost. This notion was reiterated by Department of Conservation (Table 5.4):

> It is really that thing about that if you do not measure it, you cannot manage it. So that is the big change for government departments as previously we were not measuring this. We did not know what it was costing us and as a consequence there was no incentive to really look at it.

**Emissions and Costs**

According to four of the six lead-core agencies, the programme was indeed reducing both emissions and costs (Appendix, Table 6.4), as acknowledged by Ministry of Health A (Table 5.4): "we reduced our carbon footprint considerably, so it was a pretty positive story." And, because of the CNPS programme, Government became more proficient at identifying savings:

> Every single agency that was involved in this said "I am really glad I went through that process – saved a lot of money. I am much closer to my systems across the agency. I have identified efficiencies" (Table 5.4, Ministry for the Environment A).

That said, however, Treasury (Table 5.4) indicated that is was too soon to judge whether emission and cost savings did occur: "I think that it was too soon to tell. And if [the programme] had gone for another couple of years, we might have seen something more concrete out of it."

**Networking**

The research reveals that networking was strong and effective, with all six lead-core agencies agreeing about its value to the programme (Appendix, Table 6.4). As indicated by Ministry for Economic Development B (Table 5.4), interdepartmental networking was pushed from the beginning. This was echoed by Ministry for the Environment A (Table 5.4):

> We had monthly lead six agency catch-up and that was very much a sharing of ideas… sharing of experiences and stuff whether it was negative or not, and it quite often was… people were kind of finding things hard.

While Ministry for the Environment B (Table 5.4) acknowledged that the programme had a rapid learning curve, and notwithstanding the strength and effectiveness of the information sharing, the data does show tension towards the Ministry for the Environment, who as indicated by Ministry of Health B (Table 5.4), "would basically in a nice term, dictate what we had to do next." As a result, "the lead-core agencies took it upon [themselves] to create meetings without MFE" (Table 5.4, Ministry of Health A). Ministry of Health B (Table 5.4) added that "it is a subject with high passion content as well. So it was always going to be heated."

In addition to interdepartmental networking, in an effort to make emissions monitoring more efficient and effective, some of the lead-core agencies liaised with their suppliers. And, other lead-core agencies liaised with local government, as indicated by Treasury (Table 5.4):

> Even outside of that six, the support that we got from people like Wellington Regional Council, some of the local authority people who were sort of on the sidelines doing their own thing at the same time - even getting some of that information back into the group was quite helpful too.

### 6.2.5. Moving Forward

**Next Steps**

In the absence of a Government mandate, organizational efforts to become carbon neutral have ceased. Five of the six lead-core agencies will continue to manage their carbon, however (Appendix, Table 6.5). As Ministry for the Environment A (Table 5.4) indicated, "it is kind of business as usual to be concerned about [emissions]. We will reduce as much as possible." Likewise, Treasury (Table 5.4) suggested that actions associated with the CNPS programme make sound business sense, and as a result, the agency's "reduction programmes are not being discontinued." With that said however, neither the Ministry for the Environment nor the Treasury have a specific emissions reduction target; Treasury (Table 5.4) conceded that "the Treasury is a bit too focussed on other issues at the moment. So it has not stopped - it is just lower key, I guess."

Moreover, in spite of management support to achieve the original targets, the Ministry of Health, for example, must ensure that their efforts are cost neutral:

> We are still striving for the same targets. So it is still full steam ahead as far as the Ministry is concerned and that was quite happily agreed on by Executive leadership (Table 5.4, Ministry of Health B). But, now you cannot spend a cent on it, it has got to be cost neutral (Table 5.4, Ministry of Health B).

And, the Inland Revenue Department is in full retreat:

> So a lot of the stuff around really embedding all of the reporting, it never really happened particularly well. Fully part of the business – it is probably not there… we really sort of are pulling back completely. There is no organizational impetus (Table 5.4, Inland Revenue Department).

Further, and perhaps more worryingly, in the wake of the programme's termination, as suggested by Ministry for the Environment A (Table 5.4), private sector interest in carbon neutrality collapsed:

> Feedback from private sector suggests now that Government is no longer involved in CNPS programme, those corporates and businesses that were inclined to go down this path are not now doing so because Government is not doing it.

### 6.2.6. CS1 Summary

Overall, the findings from CS1 suggest that the CNPS programme suffered from a premature launch, and was perhaps even delivered by the wrong Ministry. Yet, in spite of these drawbacks, managers in charge of the CNPS programme at the lead-core agencies asserted that emissions were decreasing and cost savings were indeed becoming evident. What's more, the lead-core Ministries increased their network circle and heightened their level of awareness with regard to climate and carbon mitigation.

Because of the lack of contemporary political impetus, however, the goal of carbon neutrality has vanished from the lead-core agencies agenda. With that said, five of the six lead-core agencies will maintain efforts to manage their carbon, but on average, at a scaled back pace.

As for why the initiative was dismantled, the majority of the lead-core six agencies believed that the decision was politically motivated. Moreover, the data suggested that a formal evaluation into the effectiveness of the CNPS programme did not occur. And, when asked whether programme stakeholders fought to block the CNPS programme's termination, while many of the lead-core agencies believed that the Ministry for the Environment put up a case for the initiative's merit, Ministry for the Environment A (Table5.4) flatly explained that it is not their role to oppose Government decisions.

## 6.3. CS2 S1 - THEMES

### 6.3.1. In the Beginning

**Rationale for Joining**

Of the 16 local government organizations interviewed for the purpose of this research, eight indicated the desire to show leadership as their rationale for joining the CCP-NZ programme (Appendix, Table 6.6). Councils demonstrated a variety of reasons for wanting to show leadership, including the need to lead the community by example, as expressed by Environment Canterbury Regional Council (Table 5.5):

> We should be leading by example, it was just seen as a good thing to do, there was a growing awareness of needing to do something. So I think you know if we are leading by example, then that is something that the public will pick up on.

Councils also sought to be a part of a recognised programme, to show their forward thinking on climate change, "to be part of that group that is seen as 'go ahead' in this area" (Table 5.5, Nelson City Council).

For two councils, the desire to join CCP-NZ was driven by the Mayor, be it to address climate change, "a sincere thing driven by the Mayor at the time," as indicated by Kapiti Coast District Council (Table 5.5). Or as Hamilton City Council (Table 5.5) suggested, to improve the bottom-line: "we had a very active mayor at the time and it was a very topical subject, but the focus was always on money, making things cost effective."

Two other councils, Kaikoura District Council and Waitakere City Council, joined the programme because the CCP-NZ programme aligned with their strategic direction. And, two other councils, Dunedin City Council and Auckland City Council, joined the programme because their council appreciated the need to reduce its carbon footprint. Auckland Regional Council, specifically, joined the CCP-NZ programme because the programme facilitated political commitment, and offered a consistent and transparent approach to climate mitigation:

> The reason why our council did become a member of CCP, it was to get clear political commitment and a mandate for officers to actually drive and

> get more momentum behind the work – we wanted to work with a national consistent framework that was comparable, consistent and transparent (Table 5.5, Auckland Regional Council A).

On the other end of the gamut, Greater Wellington Regional Council, for example, joined the CCP-NZ programme because council was looking for the low-hanging fruit, easy actions:

> [Council was] looking for basically something that wasn't going to involve too much effort, but would allow them to do something real about you know a contribution to climate change response (Table 5.5, Greater Wellington Regional Council).

**Aim (Carbon Neutral, Carbon Management)**

In terms of goals, eight of the 16 councils interviewed indicated that they were seeking to either manage their carbon footprint or go carbon neutral (Appendix, Table 6.6). Of these eight, three councils admitted that carbon neutrality was not a driver for their council, as confirmed by Hawkes Bay Regional Council (Table 5.5): "No real driver at this stage to encourage us to promote ourselves as being carbon neutral."

As Greater Wellington Regional Council (Table 5.5) acknowledged, carbon neutrality is a difficult goal to achieve, but is nonetheless "good to have it as an aspirational goal." Indeed, of the five councils striving to reach carbon neutrality, Auckland Regional Council B (Table 5.5) emphasised that council's aim was aspirational, and added that council's primary goal was "carbon reductions and maximising co-benefits."

Far North District Council (Table 5.5) suggested that their ambition for carbon neutrality was a result of the community's expectation that council should lead in this area:

> Our community expect council to be a leader in relation to climate change and so carbon neutrality is something that we should be seeking to pursue and to demonstrate to our community, to overall enhance our environmental performance.

**Leadership to the Community**

Leadership presented as a very important component to council participation in the CCP-NZ programme. Thirteen of the 16 councils interviewed indicated that they were seeking to show

leadership to the community (Appendix, Table 6.6).[332] For two of the thirteen councils leadership meant to resolve in-house (corporate) emissions first, before working with the community, as indicated by Auckland Regional Council B (Table 5.5): "It was very much we lead first – put our own house in order before we start working with the community." On the other end of the spectrum, two other councils indicated flatly that they were not aiming to lead: "No, [council] wasn't aiming to be a leader" (Table 5.5, Dunedin City Council).

**Was climate change thinking part of council policy before it joined the CCP-NZ programme?**

In terms of climate change thinking, 11 of the 16 councils interviewed indicated that climate change thinking was part of council policy prior to council joining the CCP-NZ Programme (Appendix, Table 6.6). Councils indicated that the CCP-NZ programme dovetailed with sustainability efforts, and in the case of Christchurch City Council and Dunedin City Council, the programme built on energy related policy that was already in place, as explained by Christchurch City Council (Table 5.5): "So Christchurch at the time was embarking on a pretty rigorous energy programme (Natural Step Framework). So it was business as usual rather than revolutionary change."

For some councils, climate change mitigation was not necessarily the primary goal of earlier policy, instead their policies focused on savings and efficiency, as explained by Environment Canterbury Regional Council (Table 5.5):

> I think we don't really talk about it directly in terms of carbon, but certainly talk about it in terms of savings – we want to reduce, we want to make our fleet as efficient as possible. We want to reduce our electricity usage per person per square metre… so it dovetailed quite nicely I think with joining the programme.

### 6.3.2. Support

**Senior Management Leadership (within council)**

Few councils discussed senior management involvement with the CCP-NZ programme (Appendix, Table 6.7); of the 16 councils interviewed, five councils mentioned senior management leadership. While four councils indicated that strong leadership did exist, as

[332] However, not all councils' that indicated they wished to show leadership to the community indicated that their rationale for joining the CCP-NZ programme was in fact to show leadership.

expressed by Dunedin City Council (Table 5.5) who indicated that "support structures were really high inside the council," one council suggested that senior management leadership was in fact lacking: "There was not a lot of support in-house – trying to sell the idea to council was not easy" (Environment Canterbury Regional Council, Table 5.5).

**Engagement with ICLEI**

The majority of councils that discussed programme support indicated that ICLEI was strong when it came to supporting member councils (Appendix, Table 6.7). According to two councils, the programme was particularly effective at information sharing and providing technical assistance, as confirmed by Rotorua District Council (Table 5.5):

> The material was there. If we wanted the assistance, the advice, the direction, the facilitation or putting in touch with other people – guidelines; all of that was there whenever we wanted it.

According to two other councils, however, "[ICLEI] didn't really provide that overall sort of guidance and encouragement I don't think" (Table 5.5, Hawkes Bay Regional Council). And as the data suggested, this became increasingly the case towards the end of the programme:

> In the end [CCP] wasn't giving the local government the support and information it really needed. There wasn't a lot of interaction between local government and the CCP down in Wellington in the end… It kind of fell by the wayside and so the councils were sort of left on their own to carry on (Table 5.5, Waitakere City Council).

### 6.3.3. Application

**Programme Delivery**

Of the 16 councils interviewed, only one council suggested that the programme was well delivered, while five councils explicitly advocated that the programme lacked the appropriate focus (Appendix, Table 6.8). This was manifested in two key areas: First, as Nelson City Council (Table 5.5) indicated, ICLEI encouraged artificially high emission reduction targets, which "set [council] up to fail."

And, second, as Auckland Regional Council B (Table 5.5) explained, the programme was more interested in increasing membership than addressing the appropriateness of the programme itself. This was particularly an issue for regional councils, as expressed by

Hawkes Bay Regional Council (Table 5.5), while ICLEI was promoting the value of the programme, "I didn't really find that CCP recognised the role of the regional council."

A third, albeit less discussed area concerning programme focus relates to the community component of the programme. In this respect, while Dunedin City Council (Table 5.5) believed that in fact the programme had a stronger community focus, Hamilton City Council (Table 5.5) suggested otherwise, and noted that the community component of the programme was failing, particularly towards the end of the programme:

> Where ICLEI stalled was around the community stuff… if they had more engagement either through local authorities or through other mechanisms with communities it would be a different story… the community wasn't able to get engaged too well, so the value has always been questioned, particularly recently.

**Programme Method (was the method robust enough?)**

When discussing the methodology ICLEI used for the CCP-NZ programme, the majority (10 of 16) of councils indicated that the methodology was inefficient (Appendix, Table 6.8). More specifically, Dunedin City Council (Table 5.5) explained that the programme was not sufficiently robust for council purposes, that "the actual software and methodology [ICLEI] used was quite light... [the programme] wasn't technically driven, the inventory was a bit simplistic." Wellington City Council (Table 5.5) agreed noting that the functionality of the software was inflexible: "you weren't able to put our own specific circumstances into ICLEI's inventory tool… it needs to be much more tailored to the council." Waitakere City Council (Table 5.5) reiterated these conclusions, and highlighted that if progress is measured by emissions reductions, than "the [methodology] needs to be a bit more rigorous."

Councils were also frustrated by the programme's inability to remain current, particularly with regard to global standards, as suggested by Auckland Regional Council B (Table 5.5): "I don't think CCP maintained or kept up with the maturity that grew within the sector. Some of the opportunities around benchmarking were not there. It's not ISO compliant."

Moreover, in terms of measurability, boundary scope was not well defined: "Goal posts must have shifted about three times" (Table 5.5, Greater Wellington Regional Council). For some councils this was further exacerbated by limited access to data, as explained by Dunedin City Council (Table 5.5):

> Initially the organizational thing is difficult because all our energy accounts were paper based; stored after three months off site… So there was hardly any history available locally.

Ultimately, concern surrounded the data itself. Three of the 16 councils interviewed indicated that they questioned the quality and/ or the usefulness of the data.

In spite of these criticisms (and in contradiction to the observations noted above), however, two councils did find that the programme had an effective methodology: "CCP could be tailor-made to any community" (Table 5.5, Kaikoura District Council B). And for Southland District Council (Table 5.5), the strength of the programme was in the framework: "Follow these steps and it will guide you through it… it was quite valuable in that way."

**Benchmarking**

Consistently, councils that discussed benchmarking (both domestic and/ or international), confessed that it was not a component of their carbon mitigation strategy (Appendix, Table 6.8). As explained by Wellington City Council (Table 5.5), "it became clear pretty quickly through the initial analysis of the CCP programme that every council is different. And so I found it quite difficult to benchmark." In spite of the unique nature and circumstance of each council, Auckland Regional Council A (Table 5.5) indicated that their council did in fact compare progress to that of other councils.

**Barriers to Achieving Next Milestone**

The CCP-NZ programme ended prematurely, for some councils' this was the sole barrier to achieving the next milestone (Appendix, Table 6.8). For other councils, progress was hindered by resource constraints. For three councils, this was the result of a change in council or a shift in strategic priority, as indicated by Hawkes Bay Regional Council (Table 5.5): "So we haven't put a huge amount of priority on it." And for three other councils, echoing an earlier observation, access to quality data blocked the next milestone.

For Wellington City Council specifically, the barrier to achieving the next milestone was the uncertainty surrounding the value the programme offered to council, as expressed by Wellington City Council (Table 5.5):

> Well, I guess the barriers were just wondering how much value it was going to add to us… following this process is not going to give us that much – it's not actually going to deliver that much more other than a PR exercise.

### 6.3.4. Termination

**Rationale**

Councils indicated three primary rationales for programme termination: political ideology, economics or cost, and programmatic ineffectiveness and design (Appendix, Table 6.9). 10 of the 16 councils interviewed suggested that political ideology was the primary cause of programme termination. According to Southland District Council (Table 5.5), despite the worth of the CCP-NZ programme, the new central government did not support the initiative. Nelson City Council (Table 5.5) concurred, adding that the National government saw CCP-NZ as a "nice to do' rather than a need to do;" Kaikoura District Council B (Table 5.5) explained that "[National] just didn't see green programmes as a priority." This sentiment is mirrored by Auckland Regional Council A (Table 5.5):

> So [central government] made a pretty clear message really that they didn't think [climate change] was particularly a priority… they expected the councils to either pick up the funding or for the programmes to collapse and they were fine with that…. I think political.

Far North District Council (Table 5.5) cautioned however, "that it's not as straight forward or black and white as [a shift in government]." Waitakere City Council (Table 5.5) added that regardless of the government in power, the expectation was that the CCP-NZ programme should run on its own merit, without central government financial support:

> I don't think that it coincided with the change in government - in fact. They often put funding to start programmes off, but no one expects them to keep on funding forever, the programmes should have their own momentum.

Along this line, four of the 16 councils indicated that programme termination was the result of the need to cut costs: "It's probably more about financial savings in my mind… a cost saving exercise" (Table 5.5, Wellington City Council); "I mean I think that [central

government] felt that there was probably better bang for their bucks elsewhere" (Table 5.5, Hawkes Bay Regional Council).

And while Rotorua District Council (Table 5.5) conceded that a political element does exist, the CCP-NZ programme was ultimately dismantled for economic reasons: "There's an element of political ideology, some of the elements of the National Government feeling like this is not core philosophy, but its more financial."

**Opposition to Termination**

Of the five councils that discussed opposition to programme termination, three councils indicated that stakeholders were unaware of any organised opposition (Appendix, Table 6.9). Had they had an opportunity, Dunedin City Council (Table 5.5) explained that council would have lobbied for the programme:

> So there was no opportunity [for opposition]. There was no awareness on our part that the funding was going to be withdrawn or the programme was going to fall over. It was just bang… otherwise we would have – through the local government and all the CCP people would have lobbied for it (Table 5.5, Dunedin City Council).

In the end, though ICLEI was indeed "lobbying quite hard" (Table 5.5, Wellington City Council) and encouraged councils to present the value of the CCP-NZ programme to Government, termination met little resistance.

**Evaluation**

Nine of the 16 councils interviewed believed that central government did not perform a formal review of the CCP-NZ programme's effectiveness (Appendix, Table 6.9), with three councils adding that they were never consulted, as confirmed by Kaikoura District Council B (Table 5.5): "I don't think that it was [evaluated], no. No, we certainly weren't contacted."

While four of the 16 councils believed that a formal review may have or did occur, three of the four councils acknowledged that they were not involved in the review. In a similar vein, and equally tentative, Greater Wellington Regional Council (Table 5.5) admitted that council

assumed that the Ministry for the Environment had performed an evaluation and determined the programme to be ineffective:

> Well, I think probably MFE – they must have done some analysis and decided you know its all very well saying that we've got 80 percent of the population, but what are they doing – not enough or they are not getting very far? I suspect that [Government] just saw it as ineffective really.

### 6.3.5. Outcome

**Networking/ Collaboration**

According to the research, networking and collaboration was consistently ranked by participant organizations as a co-benefit of membership in the CCP-NZ programme (Appendix, Table 6.10). 10 of the 16 councils interviewed indicated that they collaborated with other programme member councils. As Hamilton City Council (Table 5.5) explained, collaboration effectively fostered new learning:

> Pulled people together who are usually individuals working on their own or in a very small team… you actually get to talk and find out what other people are doing and how they're doing it.

On the other end of the spectrum, four councils indicated that they did not network or collaborate with either ICLEI or the other CCP-NZ programme member councils. For the larger councils, it was thought that domestic collaboration was not appropriate for their needs, as explained by Auckland City Council (Table 5.5):

> The network component was useful yes. But, to be honest, the politicians here – being the biggest council you know, I really don't feel that we're that influenced by the other councils round New Zealand. Really where we are positioning ourselves against is your Sydney's, your Brisbane's, your Melbourne's. So [collaboration] didn't really seem to grab too much traction with our politicians.

**Awareness**

Seven of the 16 councils interviewed discussed awareness; all seven councils indicated that council awareness with regard to climate change and carbon management increased as a result of their participation in the CCP-NZ programme (Appendix, Table 6.10). Dunedin City Council (Table 5.5) explained that in the absence of the programme, council would not have had the same level of understanding: "You would never see it if you weren't in the

programme – you would not have a clue." Far North District Council (Table 5.5) echoed this belief, suggesting that "[CCP-NZ] created knowledge about opportunities that are there. It galvanised council's actions in relation to the mitigation options."

And importantly, Wellington City Council (Table 5.5) admitted that the programme, through its challenges, demonstrated the critical importance of data quality, and its affect on management practices:

> I don't know that councils generally are very careful about the rigor in their data or how they use it or how it changes management practices and I think that the CCP Programme has made people a bit more aware of the importance of the rigour of your data and how you use it and I think that that message has come through quite a bit really.

And Hawkes Bay Regional Council (Table 5.5) conceded that the programme only increased councils' climate change and carbon management awareness in a narrow sense, with the programme serving as "tool that would assist with awareness rather than a driver of awareness."

**Values Embedded**

One of the outcomes of the CCP-NZ programme was the embeddedness of the programme's values in participant council policy. Eleven of the 16 councils interviewed agreed that the values of the CCP-NZ programme are now embedded in organizational management (Appendix, Table 6.10). As indicated by Christchurch City Council (Table 5.5) for example, "when council is developing new projects it takes account of the effects of climate change. It has adopted a precautionary approach to future works and planning."

This approach has been mirrored in energy management practices as well; according to Auckland Regional Council A (Table 5.5), the CCP-NZ programme made council energy management practices more current: "So I think it's sort of brought us into the 21st century and quite rapidly." And as suggested by Kapiti Coast District Council (Table 5.5), council is now in a position "where it is on the cusp of having energy management considered a normal way of doing business... and that's quite a step forward" council admits.

Wellington City Council (Table 5.5) demonstrated similar enthusiasm, indicating that the dismantling of the programme really did not impact their council because the programme's values had already gained traction. For some councils, however, as expressed by Hawkes Bay Regional Council (Table 5.5), though values are taking root, green thinking could go further yet.

On the other end of the spectrum, for two of the 16 councils interviewed, programme values have not become part of council policy. According to Environment Canterbury Regional Council (Table 5.5), this is a result of councils' lack of commitment with regard to climate change in general:

> I think because really it comes back to council and their lack of commitment or lack of desire to do anything on climate change specifically… so that is probably largely why it didn't gain a lot of traction.

Additionally, in spite of the fact that the CCP-NZ programme participant councils have the technical ability to report carbon emissions, since carbon emissions reporting is not a mandated requirement, and given as Auckland City Council (Table 5.5) indicated, "there is not a strong political rule around climate change," councils have been lax to embed programme values into policy.

**Link to other Programmes**

In terms of linking the CCP-NZ programme to other internal programmes or activities, council response was divided (Appendix, Table 6.10). While seven councils indicated that they did not integrate the CCP-NZ programme with existing programmes, six councils suggested that the programme was connected to other programmes. Christchurch City Council (Table 5.5) explained that in fact it was other programmes attaching themselves to the CCP-NZ programme: "Yeah, it was more the other way round actually."

### 6.3.6. Final Thoughts

**Impetus for Action**

While discussing the outcome of council participation in the CCP-NZ programme, the overall consensus, as evident from 11 of the 16 councils interviewed, is that the programme did serve as the impetus for on-going council action on climate change and carbon management

(Appendix, Table 6.11). The CCP-NZ programme was the catalyst that pushed councils to better understand their carbon footprint, as explained by Rotorua District Council (Table 5.5):

> I think CCP got us focussed to start with and it got us thinking about it; it got us measuring data; it got us understanding what we're doing and where the energy is used, where the emissions are and has given us some base statistics and some base philosophy. I think that has been helpful to take us forward.

For other councils, the programme was a good trigger, but then began to lose value towards the end; as Waitakere City Council (Table 5.5) admitted, councils no-longer needed the programme. This notion was mirrored by Wellington City Council (Table 5.5), who indicated that while the programme "was a very good start, [it wasn't] all encompassing enough" for council's needs.

**Success**

In terms of whether or not the CCP-NZ programme was a success, thirteen of the 16 councils interviewed concluded that the programme was a success, while two of the 16 councils suggested that it was a partial success, and one of the 16 councils flat-out said that the programme was not a success (Appendix, Table 6.11). For a variety of reasons, the majority of councils interviewed believed that, despite its problems, the CCP-NZ programme was a success. According to Nelson City Council (Table 5.5), the programme was the catalyst for action. Likewise, as expressed by Auckland Regional Council B (Table 5.5), the participation in the CCP-NZ programme "started council on the journey; it played its part and we've grown as a result of it." Kaikoura District Council B (Table 5.5) added that the "[CCP-NZ] really raised awareness at the organization level as well as the community level."

And importantly, as suggested by Kapiti Coast District Council (Table 5.5), the programme prompted political commitment, putting climate change issues on the agenda (and attached critical resources as well). This is also evident in other councils. As indicated by Christchurch City Council (Table 5.5), the programme facilitated a better understanding of climate change and carbon management issues in general:

> I think it was a success in terms of getting the people to understand the basic principles of responding to climate change in mitigation terms

> anyway and equipping them to do so and actually sharing information (Table 5.5, Christchurch City Council).

For other councils, however, the programme was not a convincing success, as suggested by Environment Canterbury Regional Council (Table 5.5): "Overall, no, not as successful as it could have been." And, as indicated by Greater Wellington Regional Council (Table 5.5), while the corporate component of the CCP-NZ programme was a success, because it failed to address the adaptation aspects of council's responsibility, the community component of the programme was not a success. Similarly, Hawkes Bay Regional Council (Table 5.5) acknowledged that benefits stemming from participation in the programme were not huge, and thus concluded that the programme unsuccessful.

### 6.3.7. Moving Forward

**Momentum**

Of the 16 councils interviewed, 11 discussed whether or not the momentum generated by membership in the CCP-NZ programme had continued after its termination (Appendix, Table 6.12). According to the data, nine of the 11 councils suggested that indeed the momentum had carried forward, as explained by Far North District Council (Table 5.5): "So there is still ongoing buy-in to the actions that have been identified through the previous CCP-NZ work, so it's generated some momentum." Additionally, three of the same nine councils indicated they have actually stepped-up their activity, increasing the momentum built by the CCP-NZ programme.

Yet two of the 11 councils admitted that since the programme was dismantled, internal interest has been low, and as a result momentum has waned. For instance, Hamilton City Council (Table 5.5) suggested that while some core councillors are still on side, "they are in the minority… this council is very conscious of what's going on with central government."

**Next Steps (Carbon Neutral, Carbon Management)**

Whether it is developing carbon management plans or implementing energy audits, 15 of the 16 councils interviewed indicated that they are moving forward, to some degree, with actions begun while participating in the CCP-NZ Programme (Appendix, Table 6.12); 12 of the 15 councils are seeking to manage their carbon footprint. As a result of their experience with the

CCP-NZ Programme, Nelson City Council has in fact developed their own emissions measuring programme (Table 5.5, Nelson City Council). Kaikoura District Council will continue to work through their climate action plan (Kaikoura District Council A, Table 5.5). Far North District Council (Table 5.5) indicated that council is in the preliminary stage of developing a climate strategy. And, Rotorua District Council (Table 5.5) explained that it is time to shift gear and focus attention on community sustainability.

While Wellington City Council (Table 5.5) revealed that council will in fact continue to work towards carbon neutrality, Hamilton City Council (Table 5.5) indicated that because GHG emissions are not a mandated measure under the Local Government Act, council has pulled back their carbon management efforts completely.

**Reduction Target**

In terms of goals, 11 of the 16 councils interviewed discussed reduction targets. While eight councils indicated that they have reduction targets, three councils suggested that they do not have targets for future reductions (Appendix, Table 6.12).

Of the eight councils with reduction targets, two indicated that they wish to stabilise their emissions; Rotorua District Council (Table 5.5) for example explained that council will stabilise emissions at 2006 levels by 2010, with the critical goal of understanding their data in an effort to generate realistic emission reduction targets in the future. Four councils suggested that they will continue to reduce their emissions; Wellington City Council (Table 5.5) indicated that their goal is to reduce emissions by 30% by 2020.

Christchurch City Council qualified its goal by suggesting that targets are effective for driving policy, but tend not to ensure action:

> They are grander. 50 percent by 2050 in terms of reductions. But in my mind I don't think targets are a very good – it's aspirational; they set a direction which is fine, but they don't set actions. Putting in a target makes you feel better, but it doesn't actually do anything (Table 5.5, Christchurch City Council).

Only two of the eight councils with carbon reduction targets remain committed to carbon neutrality, as indicated, albeit aspirationally, by Kaikoura District Council A (Table 5.5):

> We said that we were going to be zero carbon by 2015. And the realisation was that although we may never make zero carbon that it is something that we should be striving for.

### 6.3.8. CS2 S1 Summary

To summarise CS2 S1, while many councils already had climate policy in place before joining the programme, it was their membership in the CCP-NZ programme that ultimately pushed policy into organizational action. Moreover, while councils indicated that the programme suffered from several methodological problems, their participation in the programme resulted in improved networking circles and increased awareness with regard to climate change and carbon management. And, for a majority of councils, the momentum built during the programme's operation has been maintained following its termination, with many councils planning to continue with carbon mitigation to some degree.

According to the majority of councils, the CCP-NZ programme was dismantled for reasons of either economic or political ideology. Additionally, the majority of councils concluded that no formal evaluation of the programme's effectiveness was done before its termination.

## 6.4. CS2 S2 - THEMES

### 6.4.1. In the Beginning

**Initial Contact (Who approached who?)**

Of the seven local government organizations interviewed for the purpose of this research, two councils indicated that they have lost the corporate memory associated with the early stages of the programme and are thus unaware as to which organization made the initial contact (Appendix, Table 6.13). And, while one council revealed that it had initially approached ICLEI to express its interest in joining the CCP-NZ programme, three indicated that ICLEI had approached their council in the beginning, as indicated by Wellington City Council (Table 5.6), for example: "ICLEI definitely was more proactive in coming to councils."

**Timing (Rationale for joining when council did)**

In terms of timing, climate change was featuring more prominently on the global agenda, and therefore councils were becoming keen to act. For two of the seven councils, joining the programme was considered the right thing to do (Appendix, Table 6.13), as explained by Southland District Council (Table 5.6):

> It was just something that we should be doing and the world was becoming more aware about climate change... this kind of stuff made sense in terms of protecting the environment and being more efficient - even cost savings.

And for Wellington City Council, just as they were becoming keen to act on climate change, ICLEI was in the process of gathering support and meeting with prospective members:

> So it was an issue that the council was considering and it was kind of timely that ICLEI was also going around talking to councils about their programme (Table 5.6, Wellington City Council).

In terms of why councils did not join the CCP-NZ programme sooner, while Wellington City Council (Table 5.6) offered that "[climate change] definitely wasn't a priority for the council until it joined the CCP Programme," according to Nelson City Council (Table 5.6), council did not join the programme earlier because it was concerned about the hidden costs it would incur:

> The reasons for not joining [the programme] earlier were mainly related to concerns of the amount of staff time it would take and some councillors' fears about you know, you get some support like the intern, but what hidden cost would evolve.

**Aim (Carbon management v. Carbon neutral)**

In terms of councils' aim in joining the CCP-NZ programme, five of the seven councils indicated that when they joined the programme they were seeking to manage their carbon (Appendix, Table 6.13). At a more root level, two councils indicated that their initial goal was an increased understanding of their carbon footprint, as suggested by Dunedin City Council (Table 5.6): "I suppose initially we just wanted to know what the picture is."

In terms of efforts beyond carbon management, though Wellington City Council (Table 5.6) indicated that council's aim was to achieve carbon neutrality, this goal came later on. Greater

Wellington Regional Council (Table 5.6) on the other hand, explained that council had no interest in becoming carbon neutral:

> Carbon neutrality was going to be a minefield… So it was quite clear to me that the more the science of doing inventories evolved, the more the goal posts were going to shift.

**Prior Policy (Climate change thinking before joining programme)**

While two councils indicated that sustainability policy did pre-exist council's membership in the programme, four of the seven councils revealed that climate change thinking was not part of council policy before joining the CCP-NZ programme (Appendix, Table 6.13). And for Nelson City Council, climate change thinking was only present in so far as it related to adaptation, as suggested by Nelson City Council (Table 5.6): "Yes, in terms of you know how high a bridge should be, so that adaptation aspect."

**Buy-in (Within council and management)**

In terms of programme buy-in from within council and management, five of the seven councils indicated that levels of interest were inconsistent (Appendix, Table 6.13). For three councils, political buy-in was weak. According to Wellington City Council (Table 5.6), though "there were definitely people who didn't think climate change was an issue and didn't believe in the science in climate change," the programme did ultimately gain traction:

> So I mean it definitely wasn't like, 'anti the programme', but there wasn't like an enthusiastic ground swell of positive energy. But I mean there was definitely support and that's why we participated.

Likewise, for Rotorua District Council, while council did not necessarily buy-into the CCP-NZ programme, council believed that its membership was the right thing to do:

> No [buy-in], not at that time… I don't think there was ever a view at that point anyway to really take it by the throat and to you know really buy into it - I think it was just playing with it... I think at the time that this was being promoted because of the minimal cost and just being seen to be doing the right thing (Table 5.6, Rotorua District Council).

In terms of senior management buy-in, three councils indicated that senior management interest in the CCP-NZ programme was weak. For Nelson City Council, while political

interest was split 50/50, the Chief Executive did not accept carbon management as core business:

> Some councillors keen - executive quite wary and some councillors quite wary, so 50/50... Well, actually our chief executive at the time… his view was that [CCP-NZ] wasn't core council business (Table 5.6, Nelson City Council).

In terms of community buy-in, while Greater Wellington Regional Council (Table 5.6) indicated that support for council acting on climate change was dependent on the individual community, Wellington City Council (Table 5.6) suggested that community interest was quite pervasive: "Overwhelming support for acting on climate change."

### 6.4.2. Support

**Engagement with ICLEI**

While ICLEI support within Australia was effective, two of the seven councils noted that the ICLEI presence in NZ was not engaged with its council (Appendix, Table 6.14), as indicated by the following:

> Oh, I don't think [ICLEI] were engaged at all. Well, to be honest ICLEI was a bit of a joke anyway.... and you know the support that they gave was minimum and random and not very professional at times. I mean I think ICLEI in Australia was doing a wonderful job, but we really weren't getting any useful information out of ICLEI New Zealand. They were under-resourced, understaffed and they weren't adding a lot of value (Table 5.6, Auckland Regional Council).

That said, five of the seven councils indicated ICLEI was indeed engaged with their council. In the case of Wellington City Council, however, Wellington City Council (Table 5.6) confessed that this may have been the result of location, given that ICLEI's office was located in Wellington.

But, while engagement did exit, Wellington City Council (Table 5.6) expressed that the engagement was not effective due to personality conflicts. This was reiterated by Greater Wellington Regional Council (Table 5.6): "People didn't find [the contact] easy to work with and so they tended to kind of keep her at arms length."

**Engagement with Partners (The Ministry for the Environment and Local Government New Zealand)**

In terms of partner engagement, all seven programme member councils indicated that the Ministry for the Environment and Local Government New Zealand were not engaged with councils (Appendix, Table 6.14):

> No, [the Ministry for the Environment and Local Government New Zealand] had no role at all; they were just not involved...Neither of them was involved really; I didn't see them as being active partners (Table 5.6, Auckland Regional Council).

Moreover, Dunedin City Council (Table 5.6) added that there was a lack of coordination between the programme funder (the Ministry for the Environment) and the programme provider (ICLEI):

> So I don't think ICLEI got involved with [the Ministry for the Environment] to say, "Right, here's an ICLEI MFE programme," so they didn't integrate very well like that.

**Role of Intern**

Only three of the seven councils discussed the role of the intern (Appendix, Table 6.14). While Greater Wellington Regional Council (Table 5.6) indicated that their intern was effective, two of the seven councils suggested that their intern lacked the experience necessary to effectively complete their job, as explained by Southland District Council (Table 5.6): "Probably the intern's inexperience. That's why I would have to do a bit as well…I would have to go and do a lot of checking."

According to Nelson City Council (Table 5.6), council attributed the ineffectiveness of their intern to the fact that the Ministry for the Environment was covering remuneration:

> You know how when you get something done for free – if the Government's paying, you're a bit less careful about it or even valuing the information that you get.

### 6.4.3. Application

**Programme Methodology (was the programme robust enough?)**

From a methodological perspective (i.e. GHG inventory development), only two of the seven councils indicated that the programme's rigour was sufficient (Appendix, Table 6.15). That said, while they believed that the methodology was sound, Southland District Council (Table 5.6), for example, conceded that the data quality was poor.

Four of the seven councils indicated that the programme's approach lacked rigour. According to Dunedin City Council (Table 5.6), though the programme's methodology was strong from an overall concept perspective, it failed in practice. Likewise, because the inventory software did not mesh with council's utility management software, the programme was inadequate from an application perspective, as expressed Auckland Regional Council (Table 5.6):

> No...it was poor and how they classified things didn't relate to how it was based in the utility management software and so it didn't mean anything to staff on the ground... it really needed to develop and it didn't.

In terms of community data, as indicated by two councils, the lack of quality and consistent data hindered the effectiveness of the community component of the programme as well; for Greater Wellington Regional Council (Table 5.6), the community inventory just wasn't sufficiently rigorous: "we just didn't think it was robust enough to stand up to the kind of scrutiny we thought we might be subjected to."

**Transferability (From CCP-Australia)**

Only four of the seven councils discussed transferability. In terms of how well the CCP-NZ programme transferred to New Zealand from its parent programme in Australia (CCP), two councils indicated that the programme translated well to NZ (Appendix, Table 6.15), with Greater Wellington Regional Council (Table 5.6) suggesting that "an inventory's an inventory… Its kind of neutral across borders in a way." Notwithstanding their belief that the programme did transfer well to NZ, the council conceded that the programme lacked an adaption component.

Two councils concluded that in fact the programme did not transfer well to NZ, with Auckland Regional Council (Table 5.6) suggesting that the programme did not address the

community side well enough. For Dunedin City Council, because ICLEI did not provide adequate resources for the NZ arm of the initiative, the CCP-NZ programme did not translate as well as it otherwise could have:

> There was a lot more support in some other areas for that programme and [Australia] was throwing money at it and that wasn't going to happen here. I think that [CCP (Australia)] probably had more staff over there, more support… We had one little group in Wellington with five people or four people that were running this programme in New Zealand (Table 5.6, Dunedin City Council).

### 6.4.4. Outcome

**Costs Benefit Analysis (Benefits outweigh the costs?)**

From a cost versus benefit perspective, the majority of councils interviewed indicated that the programme's benefits did outweigh the costs (Appendix, Table 6.16), with Auckland Regional Council (Table 5.6) calling the benefits "fantastic." With that said, however, two of the six councils that held this belief qualified their response, and added that the costs were not actually high, as suggested by the following:

> I think they did (benefits outweigh the costs) initially because the costs were pretty small, but the benefits were that it started to highlight the issues inside the council. So from a value proposition I'd say yes, it was good value (Table 5.6, Dunedin City Council).

Ultimately, Southland District Council (Table 5.6) conceded that at this stage it does not know whether the benefits outweighed the costs:

> I'm not sure… I've never sat down and looked at what we've achieved. Quite a lot of things have been done on the action plan, so whether that has produced savings and offset the costs of my time, I'm not sure.

**Emission Reductions (were they experienced?)**

While five of the seven councils indicated that they did experience emission reductions as a result of participation in the programme (Appendix, Table 6.16), with Auckland Regional Council (Table 5.6) explaining that they were meeting and going beyond their reduction targets, two councils indicated that it is difficult to know at this stage whether the programme did result in the reduction of emissions. And though Southland District Council (Table 5.6)

indicated that they did experience a reduction in emissions, they acknowledged that this claim has not been measured: "I think there would be. Of course we haven't measured it."

### 6.4.5. Final Thoughts and Membership Fee

**Programme's Greatest Influence on Council**

As for the CCP-NZ programme's greatest influence on member councils, awareness raising was the common response for four of the seven councils (Appendix, Table 6.17), as explained by Southland District Council (Table 5.6):

> Raising awareness... Just getting us thinking about it – about reducing our emissions and being more energy efficient, that's probably the greatest influence it had – raising the awareness about it all.

Along a similar vein, three of the seven councils indicated that the programme's greatest influence was that it served to catalyse council action on climate mitigation, as expressed by the following:

> We probably wouldn't have got started as quickly as we have and have progressed as quickly subsequent to being a member. So I think that that was the primary catalyst for all that we're doing now around sustainability and climate change (Table 5.6, Rotorua District Council).

> Definitely – yeah, there was nothing in any council policy or strategy that mentioned responding to climate change either through adaptation or reducing emissions, so by joining CCP that was our first policy decision on responding to climate change... Just giving us a blueprint to start with (Table 5.6, Wellington City Council).

**Summing up council's experience with the programme**

Thinking back on their experience with the CCP-NZ programme, four of the seven councils indicated that their overall experience with the programme was positive; for Rotorua District Council, like others, the programme was the impetus for action on climate change (Appendix, Table 6.17):

> Positive… it was the primary catalyst to doing something positive around having sustainability actions and objectives in the organization, so it was something that you could hang your hat on… So if we didn't have that, I think we would probably have been a couple of years behind where we are now (Table 5.6, Rotorua District Council).

Nelson City Council (Table 5.6) concluded that while their overall experience with the programme was positive, council believed that the programme had run its course. Southland District Council (Table 5.6), on the other hand, while also confirming that their experience with the programme was positive, suggested that because of its premature ending, it did not have the opportunity to prove itself:

> Summing up - it was a very good experience... I just think the incoming Government had different priorities and so they ultimately really pulled the pin because I think the programme was working well… more and more and more people were joining. So it didn't really get a chance to prove itself.

And while two councils indicated that their overall experience with the programme was mixed, with Auckland Regional Council (Table 5.6) explaining that "it was a victim of its own success really, it became unwieldy and slow... it didn't evolve and they didn't invest the money and time into it," Dunedin City Council (Table 5.6) flatly indicated that their overall experience with the programme was disappointing: "Disappointing… there wasn't a lot of value coming in for the money. I felt like we were just isolated away a little bit from the programme itself." Later, qualifying their conclusion, Dunedin City Council (Table 5.6) acknowledged that the marketing side of the programme was sound, with "[ICLEI] waving the flag and getting Government support," but the implementation component failed to deliver: "It just didn't get the movement inside the organization."

**Had the Ministry for the Environment not Paid the Initial Membership Fee, Would Council have Joined the Programme?**

In terms of whether councils would have joined the CCP-NZ programme in the absence of initial Ministry for the Environment funding, three of the seven councils indicated that they would have joined (Appendix, Table 6.17), with Auckland Regional Council (Table 5.6) expressing that "the funding was not an issue. It didn't really make any difference."

And though two of the seven councils suggested that they would not have joined the programme without the Ministry for the Environment's funding, Rotorua District Council (Table 5.6) indicated that they do not know whether they would have joined the CCP-NZ programme in the absence of funding, expressing that there likely would not have been sufficient support within council:

> I don't know… I would say there would be at least some doubt as to whether we would have. I doubt whether there would have been enough support within the organization.

**If the Programme had Continued, Would Council have Paid the Membership Fee?**

As for whether council would have paid the on-going membership fee following the Ministry for the Environment's egress from the programme, four of the seven councils indicated they would not have paid the membership fee (Appendix, Table 6.17). Three of the seven councils, on the other hand, indicated that they would have paid the membership fee, as indicated by Auckland Regional Council (Table 5.6):

> So really my council was willing to support ICLEI and to give the money just really because we wanted to keep that data available and keep that website going.

### 6.4.6. Moving Forward

**Has Council Joined Another Programme?**

In terms of whether councils have joined another programme in the absence of the CCP-NZ programme, three of the four councils that discussed this matter indicated that they have in fact joined another programme (Appendix, Table 6.18).

For Dunedin City Council, while it indicated that the new programme it has joined is "much more prescriptive than CCP" (Table 5.6, Dunedin City Council), it acknowledged, however, that the programme does not offer the critical networking component present in the CCP-NZ programme.

Four of the seven councils suggested that they have not joined another programme, with Nelson City Council (Table 5.6) noting that cost was a concern: "No… they're too expensive."

**Carbon Management Linked into Reporting?**

In terms of whether carbon management has been linked into council's existing reporting mechanism (i.e. the Annual Report or the Long-term Community Council Plan), three of the

seven councils indicated that at this stage no link exists (Appendix, Table 6.18), though Dunedin City Council (Table 5.6) suggested "that's coming down the line."

And, though Nelson City Council (Table 5.6) indicated that the link does exist, it is informal at this stage: "I don't know how closely aligned it is with financial policy in a formal sense. Its still more of an informal link I think – it's not a big driver."

**Next Steps (carbon neutral, carbon management)**

Five of the seven councils indicated that their next steps will involve either managing or reducing their carbon (Appendix, Table 6.18). In terms of carbon neutrality, Greater Wellington Regional Council (Table 5.6) expressed definitive opposition: "It is manage or reduce. Not going carbon neutral – definitely not." For Wellington City Council, however, though they conceded that they are in no rush, council does have a carbon neutral vision:

> We do have a carbon neutral vision... I mean there's not any urgency to become carbon neutral because we still need to focus on the reduction side of things so much (Table 5.6, Wellington City Council).

And though Rotorua District Council has shifted away from carbon management, council has adopted a sustainability policy. Auckland Regional Council's position is complicated by the recent mega city amalgamation, which has left council unaware of their next move with regard to climate change and carbon mitigation: "I don't know what we're doing at the moment" (Table 5.6, Auckland Regional Council).

**Reduction Target**

While three of the seven councils indicated that their current target involves emission reductions and stabilisation (Appendix, Table 6.18), with Wellington City Council (Table 5.6) revealing, for example, that:

> For both corporate and community we are looking to stabilise our emissions at 2010 levels. The corporate emission reductions goal [is] to reduce emissions by 40 percent by 2020 and for the community 30 percent by 2020.

Another three councils suggested that they do not have a target at this time; though council does not have an emissions reduction target, Rotorua District Council (Table 5.6) indicated

that council's path forward does involve sustainability thinking: "It's not about meeting a particular carbon reduction target, its all about sustainability."

### 6.4.7. CS2 S2 Summary

In summary of CS2 S2 analysis, in the beginning, ICLEI courted councils to join the programme. Given that climate was starting to feature more prominently as a council priority, councils began to join the programme. According to the majority of councils, while engagement with ICLEI was good, partner (the Ministry for the Environment and Local Government New Zealand) engagement was not. Furthermore, the interns sponsored by the Ministry for the Environment to assist with inventory development were on average ineffective in their role.

While the majority of councils were split on whether the programme transferred well from the parent programme in Australia, the majority view was that the programme's approach was not sufficiently rigorous enough in the NZ context. That said, councils experienced emission reductions and stated that the overall experience was positive. Moving forward, the majority of councils will aim to either reduce or stabilise their carbon emissions.

## 6.5. CS2 S2 - WORD COUNT RESULTS

### 6.5.1. Annual Reports

**'Climate Change'**

The number of councils that referred to 'climate change' in their Annual Reports increased from 28% (2 of 7) of councils in the first year of CCP-NZ programme membership to 86% (6 of 7) of councils in 2007/ 2008 (Fig. 6.1). This trend however, decreases to 57% (4 of 7) of councils in 2008/ 2009. While the trend does increase to 71% (5 of 7) of councils for 2009/ 2010, given the lack of data for Auckland Regional Council, it is not possible to judge the extent of the increase.

**'Carbon'**

The number of councils that referred to 'carbon' in their Annual Reports increased from 43% (3 of 7) of councils in the first year of programme membership to 57% (4 of 7) of councils in 2007/ 2008. Though this trend continues to rise in 2008/ 2009, with 86% (6 of 7) of councils making reference to 'carbon,' only 71% (5 of 7) of councils referred to 'carbon' in their

Annual Report 2009/ 2010. And again, given the lack of data for Auckland Regional Council, it is not possible to judge the extent of the increase.

In addition, and of important note, not all reference to 'carbon' related to climate change or climate change mitigation. In year 1 of council membership in the CCP-NZ programme, for example, reference to 'carbon' related to 'carbon' monoxide and activated 'carbon' bio filter.[333] In council Annual Reports for 2007/ 2008, with the exception of one council (Nelson City Council), all reference to 'carbon' did relate to climate change or climate change mitigation.[334] In council Annual Reports for 2008/ 2009, all reference to 'carbon' related to climate change or climate change mitigation.[335] And in council Annual Reports for 2009/ 2010, while Nelson City Council's four references to 'carbon' are split between activated 'carbon' filter (1x) and carbon emissions (3x), all reference made by the other councils related entirely to climate change or climate change mitigation.[336]

**'Carbon Management' and 'Carbon Neutral'**

With the exception of 2007/ 2008, where 'carbon neutral' is present in 14% (1 of 7) of council Annual Report, the words 'carbon management' and 'carbon neutral' are not mentioned in the Annual Reports of any of the seven councils' first year of programme membership through 2009/ 2010. Because the data set is incomplete for Annual Report 2009/ 2010, it is difficult to assess the significance of this trend.

**'Communities for Climate Protection - New Zealand Programme'**

The number of councils that referred to 'Communities for Climate Protection - New Zealand programme' (or 'CCP-NZ') in their Annual Report increased from 28% (2 of 7) of councils in the first year of programme membership to 43% (3 of 7) of councils in 2007/ 2008. This

[333] Annual Report first year of programme membership ('carbon'): Auckland Regional Council - carbon monoxide; Nelson City Council - activated carbon bio filter; Wellington City Council - carbon monoxide (5x).

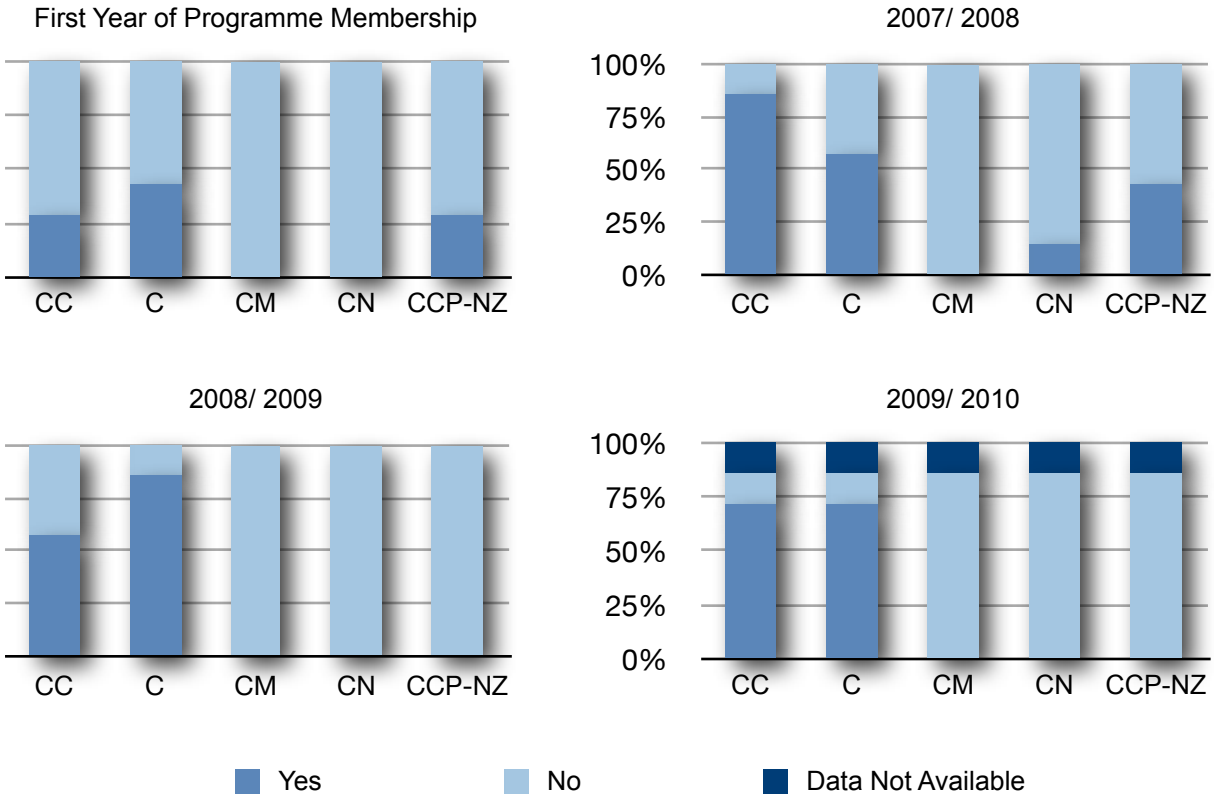
[334] Annual Report 2007/ 2008 ('carbon'): Auckland Regional Council - CarbonNow, Carbon Future, carbon accounting, carbon responsibility, carbon footprint; Wellington RC - carbon footprint; Nelson City Council - activated carbon bio filter; Wellington City Council - carbon emissions, carbon sinks, carbon dioxide (4x), carbon neutral (4x), carbon credit.

[335] Annual Report 2008/ 2009 ('carbon'): Auckland Regional Council - CarbonNow, Carbon Future, carbon accounting, carbon responsibility; Wellington Regional Council - carbon reduction, carbon forests, carbon footprint; Rotorua District Council - carbon emissions; Southland District Council - carbon emissions, carbon credits; Nelson City Council - carbon reduction; Wellington City Council - carbon emissions (3x), carbon credits (7x), carbon absorption (2x), carbon neutrality (2x), carbon dioxide.

[336] Annual Report 2008/ 2009 ('carbon'): Rotorua District Council -carbon emissions; Southland District Council - carbon emissions, carbon credit; Dunedin City Council - carbon footprint, carbon credit (2x), carbon sequestration (2x); Nelson City Council - carbon filter, carbon emissions (3x); Wellington City Council - carbon footprint, carbon economy, carbon absorption, carbon credit (4x), carbon monoxide (2x).

trend however, decreases to zero councils in 2008/ 2009 and 2009/ 2010. Given the lack of data for Auckland Regional Council, it is not possible to judge the full extent of the decrease.

Figure 6.1: Presence of word(s) in councils' Annual Report during the respective first year of programme membership through 2009/ 2010[337]




### 6.5.2. LTCCP 2009 to 2019 and Annual Plan 2010/ 2011

**'Climate Change'**

While all seven councils referred to 'climate change' in their Long Term Community Council Plan 2009 to 2019, only 71% (5 of 7) of councils mentioned 'climate change' in their Annual Plan 2010/ 2011 (Fig. 6.2).

**'Carbon'**

While all seven councils referred to 'carbon' in their LTCCP 2009 to 2019, only 57% (4 of 7) of councils mentioned 'carbon' in their Annual Plan 2010/ 2011. In terms of the LTCCP 2009 to 2019, while the vast majority of references to 'carbon' related to climate change or climate change mitigation, one council (Nelson City Council) used 'carbon' in the context of

[337] See Appendix, Table 6.19 - Table 6.22, for data sets. CC = 'climate change'; C = 'carbon'; CM = 'carbon management'; CN = 'carbon neutral'; and, CCP-NZ = 'CCP-NZ' and/ or 'Communities for Climate Protection - New Zealand programme'.

'carbon' dating.[338] Likewise, in terms of the Annual Report 2010/ 2011, not all reference to 'carbon' was directly related to climate change or climate change mitigation, with one council (Nelson City Council) using 'carbon' in the context of 'carbon' monoxide.[339]

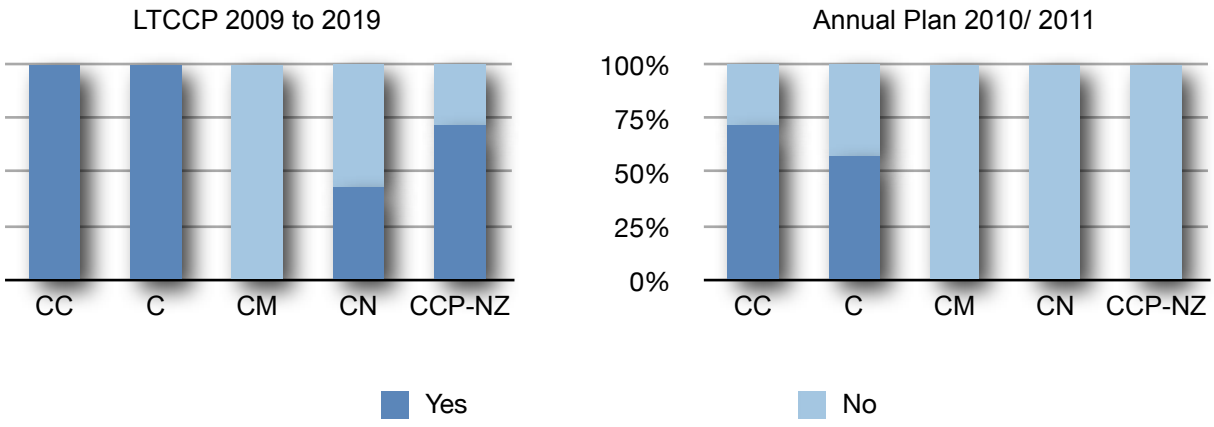
**'Carbon Management' and 'Carbon Neutral'**

Zero councils made reference to 'carbon management' in their LTCCP 2009 to 2019, and only 43% (3 of 7) of councils mentioned 'carbon neutral' in their LTCCP 2009 to 2019. In terms of the Annual Plan 2010/ 2011, neither 'carbon management' nor 'carbon neutral' was mentioned by any council.

**'Communities for Climate Protection - New Zealand Programme'**

While 71% (5 of 7) of councils referred to 'Communities for Climate Protection - New Zealand Programme' (or 'CCP-NZ') in their LTCCP 2009 to 2019, zero councils made reference to 'Communities for Climate Protection - New Zealand Programme' (or 'CCP-NZ') in their Annual Plan 2010/ 2011.

Figure 6.2: Presence of word(s) in councils' Long Term Community Council Plan 2009 to 2019 and Annual Plan 2010 to 2011[340]




[338] LTCCP 2009 to 2019 ('carbon'): Auckland Regional Council - carbon neutral, carbon mitigation, low carbon region, carbon price (2x); Wellington Regional Council - carbon footprint (2x), carbon neutral, carbon reduction (4x), carbon dioxide, carbon tax; Rotorua District Council - carbon credits (7x), waste carbon (re. energy) (9x), carbon footprint (2x); Southland District Council - carbon dioxide, carbon footprint, carbon credits, carbon emissions (2x), carbon price (2x), carbon liability; Dunedin City Council - carbon footprint; Nelson City Council - carbon reduction (3x), carbon credits, carbon dating, carbon trading; Wellington City Council - carbon emissions (4x), carbon neutrality (2x), carbon lifestyle, carbon sink, carbon monoxide (3x), carbon credits.

[339] Annual Plan 2010/ 2011 ('carbon'): Wellington RC - carbon footprint, carbon reduction; Southland District Council - carbon emissions; Dunedin City Council - carbon credits; Nelson City Council - carbon monoxide.

[340] See Appendix, Table 6.23 and Table 6.24, for data sets. CC = 'climate change'; C = 'carbon'; CM = 'carbon management'; CN = 'carbon neutral'; and, CCP-NZ = 'CCP-NZ' and/ or 'Communities for Climate Protection - New Zealand programme'.

### 6.5.3. CS2 S2 Word Count Results Summary

In terms of CS2 S2 word count analysis, the presence of key climate change and climate change mitigation words varied across and between the different strategic reports. For example, 'climate change' appeared in 28% to 86% of the seven councils' Annual Reports between councils' first year of programme membership and 2009/ 2010. And though 'climate change' was mentioned in all seven council LTCCPs, 'climate change' was only referenced in 71% of council Annual Plans 2010/ 2011.

As for 'carbon,' it appeared in 43% to 86% of the seven councils' Annual Reports between councils' first year of programme membership and 2009/ 2010. And again, while 'carbon' was mentioned in all seven council LTCCPs, 'carbon' was only referenced in 57% of council Annual Plans 2010/ 2011. In addition, with respect to 'carbon,' while the majority of instances did indeed relate to climate change or climate mitigation, a number of references did not. For instance, 'carbon' was also mentioned in the context of geologic dating and filtration (activated carbon). Interestingly, 'carbon management' was not mentioned in the Annual Reports, LTCCPs or Annual Plans of any of the seven councils. 'Carbon neutral' appeared in zero to 14% of the seven councils' Annual Reports between councils' first year of programme membership and 2009/ 2010. And while 'carbon neutral' was mentioned in 43% of the seven councils' LTCCPs, 'carbon neutral' was not referred to in any of the councils' Annual Plans 2010/ 2011.

Similarly, 'Communities for Climate Protection - New Zealand Programme' (or 'CCP-NZ') appeared in zero to 28% of the seven councils' Annual Reports between councils' first year of programme membership and 2009/ 2010. And while 'Communities for Climate Protection - New Zealand programme' (or 'CCP-NZ') was mentioned in 71% of the seven councils' LTCCPs, 'Communities for Climate Protection - New Zealand programme' (or 'CCP-NZ') was not mentioned in any of the councils' Annual Plans 2010/ 2011.[341]

[341] Given that the purpose of the LTCCP is to document council's vision for the next 10 years, it is a good barometer of local government's commitment to climate change and climate change mitigation. Further research into the remaining 27 CCP-NZ member councils LTCCPs would therefore be instrumental in sharping the precision of this analysis. CCP-NZ (2009), for example, indicates that by 2009 20 of the 34 (59%) participant councils specifically mentioned CCP-NZ, up from eight councils (47%) in the 2006 to 2016 LTCCPs when only 17 councils were participating in the programme. This represents a 12% increase in reference to the CCP-NZ programme.

## 6.6. SUMMARY AND LOCATING THE RESEARCH

### 6.6.1. Summary of Chapter 6

Overall, the findings from both case studies suggest that in spite of drawbacks, senior managers in charge of the respective programme, consistently asserted that emissions were decreasing and cost savings were indeed becoming evident. What's more, the organizations increased their network circle and heightened their level of awareness with regard to climate and carbon mitigation.

With that said, however, while five of the six lead-core agencies involved in the CNPS programme will maintain efforts to manage their carbon, as a result of the lack of political motivation, the goal of carbon neutrality has vanished. Likewise, the majority of CCP-NZ programme member councils will aim to either reduce or stabilise, to varying degrees, their carbon emissions.

As for why the initiatives were dismantled, the majority of organizations in CS1 and CS2 believed that their respective programme was terminated for reasons of political ideology. Additionally, the consensus among the organizations was that no formal evaluation of the CNPS or the CCP-NZ programmes' effectiveness was done prior termination.

In terms of CS2 S2 word count analysis, the presence of key climate change and climate change mitigation words varied across and between the different strategic reports. Interestingly, 'carbon management' was not mentioned in the Annual Reports, LTCCPs or Annual Plans of any of the seven councils. And while 'Communities for Climate Protection - New Zealand programme' (or 'CCP-NZ') was mentioned in 71% of the seven councils' LTCCPs 2009 to 2019, reference to the initiative appeared in only zero to 28% of the seven councils' Annual Reports between councils' first year of programme membership and 2009/ 2010, and was not mentioned in any of the councils' Annual Plans 2010/ 2011.

### 6.6.2. Locating the Research

There is a paucity of academic work exploring how public sector organizations determine strategies to manage their carbon and achieve carbon neutrality. Review of themes emerging from case study transcripts provides insight into the functional effectiveness of the CNPS and the CCP-NZ programmes, two key initiatives designed to help NZ public sector organizations

mitigate their carbon footprint. In line with the objectives of this research, analysis of themes sheds light on Government's rationale for the termination of these two efforts, and public sector organizational resolve for carbon management and neutrality in the absence of Government leadership and support.

This will be explored further in the two chapters that follow: In Chapter 7, were deLeon's model of programme termination is applied to the data in order to determine whether the dismantling of the CNPS and the CCP-NZ programmes aligns with economics, programmatic inefficiency, or political ideology. Then, in Chapter 8, were the research findings are further analysed in order to better understand Government's new direction on climate change and carbon management.

# CHAPTER 7 - FINDINGS II: APPLICATION OF THEORY

## 7.1. INTRODUCTION

### 7.1.1. Introduction to Chapter 7

As discussed in Chapter 4, the role of the theoretical framework is to provide a conceptual view of how relationships among several factors are important to the objectives of the research (Radhakrishma et al. 2007). In this chapter, data resulting from the semi-structured interviews with the senior managers from NZ ministries and local government councils is interpreted through deLeon's model of programme termination in order to determine whether the dismantling of the CNPS and the CCP-NZ programmes aligns with economics, programmatic inefficiency, and/ or political ideology.

This chapter focuses on the themes relevant to deLeon's (1982a) rationales for programme termination, namely those that concern programme delivery, application and termination.[342] It is important to note that while the previous chapter was organised by case study, here, in order to assess the appropriateness deLeon's model, results from CS1, CS2 S1 and CS2 S2 are aggregated together.

### 7.1.2. Chapter Purpose and Outline

The aim of this chapter is two-fold: First, to interpret the findings resulting from the semi-structured interviews from CS1, CS2 S1, and CS2 S2 (see Chapter 6) through the study's theoretical lens, deLeon's Termination Theory; and second, to determine whether the dismantling of the CNPS and the CCP-NZ programmes aligns with deLeon's (1982a) rationales for programme termination.

This chapter is divided into three primary sections, (7.1) Introduction, (7.2) Rationales for Programme Termination; and, (7.3) Summary and Locating the Research. Section 7.1 begins with a quick introduction to the chapter, including a description of the chapter's purpose. Section 7.2 discusses the research findings in the context of deLeon's (1982a) Termination Theory. And, in the final section, in addition to providing a brief summary of the chapter, section 7.3 locates the chapter within the thesis.

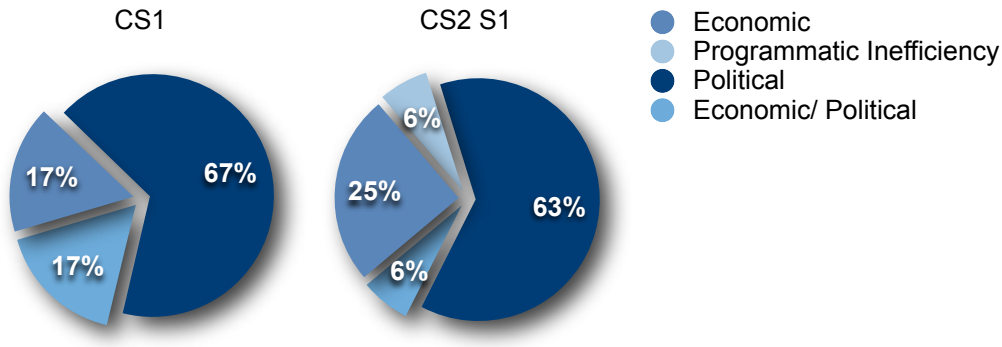
[342] Chapter 8 will discuss all the findings resulting from the research: including the themes from CS1, CS2 S1 and CS2 S2, data resulting from the semi-structured interviews with the programme architects; CS2 S2 Word Count Results; and, other sources that have provided insight into this research, i.e. department/ council websites and media releases.

## 7.2. RATIONALES FOR PROGRAMME TERMINATION

### 7.2.1. Economics

DeLeon's first rationale for programme termination concerns financial constraints or budgetary cutbacks. As noted in Chapter 4, economics is quickly referred to as the stimulus for public sector programme termination (i.e. Levine, 1982; Behn, 1980; Graddy & Ye, 2008). This trend is exacerbated during times of economic pressure, with austerity measures, at the very least, justifying programme retrenchment (i.e. Ignatius & Ibrahim, 1982; Adams et al., 2007). However, results from CS1 indicated that only 17% (1 of 6) of the organizations interviewed believed that the CNPS programme was terminated for economic reasons (Fig. 7.1).[343] Results from CS2 S1, while slightly higher, likewise remain relatively low with 25% (4 of 16) of the organizations believing that the CCP-NZ programme was terminated for purely economic reasons.[344]

Figure 7.1: Rationales for programme termination[345]




In terms of the CNPS programme, according to Treasury (Table 5.4), "central government did not see the value for the money." And as Ministry of Health B (Table 5.4) explained, "the big thing I guess going back to carbon neutral by 2012, is the fact that to offset it, it was going to cost around $300,000 - $400,000 a year."

Wellington City Council (Table 5.5) presented a similar argument for the termination of the CCP-NZ programme, indicating that "it's probably more about financial savings… a cost saving exercise." And Hawkes Bay Regional Council (Table 5.5) added that "[central government] felt that there was probably better bang for their bucks elsewhere." More to the

[343] 17% (1 of 6) of CS1 organizations believed that the programme was terminated for both economic and political reasons.

[344] 6% (1 of 16) of CS2 S1 organizations believed that the programme was terminated for both economic and political reasons.

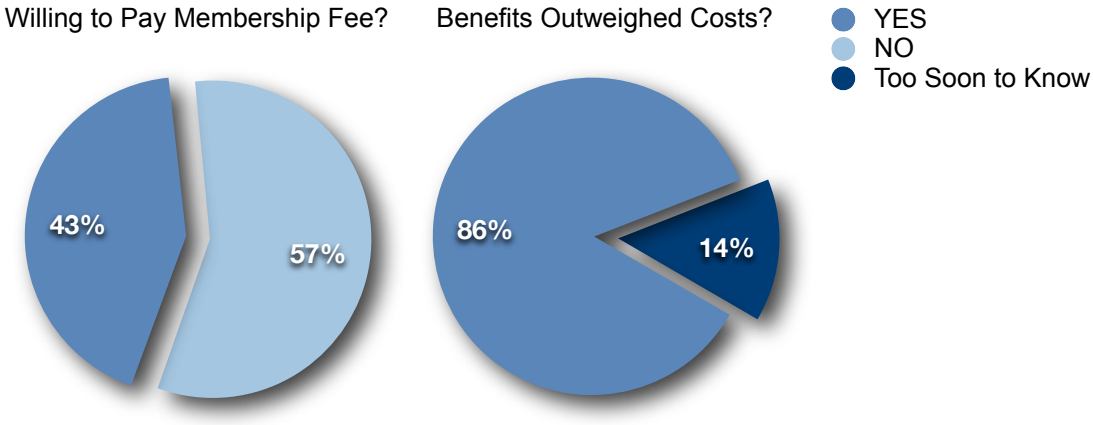
[345] See Appendix, Table 6.3 and Table 6.9, for data sets.

point, according to Waitakere City Council (Table 5.5), the expectation was that once the programme gained momentum, councils' would absorb programme costs themselves.

Conversely, ministry's were not expecting to absorb costs associated with the CNPS programme. As Ministry of Health A (Table 5.4) explained, "our biggest problem was that the Ministry was not prepared – there was no budget at all." The programme had a start-up cost of $10.4 million gross over three years, which according to Ministry of Health B (Table 5.4) "[was] distributed at MFE's discretion towards offsetting the cost of audits – for initial audits and setups." As for efforts moving forward, including emission reduction plans, "all of the staff resources were essentially out of baseline" (Table 5.4, Ministry for the Environment B).

As for councils' willingness to pay programme membership fees in the absence of Government funding, while 43% (3 of 7) of CS2 S2 council's indicated that they would have paid the membership fee had the CCP-NZ programme continued, a majority of 57% (4 of 7) indicated that they would not have paid the membership fee (Fig. 7.2): "So no, they wouldn't have – no. I think if they had seen better value for the money [council] certainly would have" (Table 5.6, Greater Wellington Regional Council).

Figure 7.2: CS2 S2 council willingness to pay membership fee in absence of Government funding and assertion that benefits outweighed the costs[346]




Interestingly, however, while deLeon (1982a) cautions that it is difficult to assess the benefits versus the costs of public sector programmes, 86% (6 of 7) CS2 S2 councils indicated that the

[346] See Appendix, Table 6.16 and Table 6.17, for data sets.

benefits associated with membership in the CCP-NZ programme did indeed outweigh the costs.[347] Yet this finding may not be a surprise given that as Greater Wellington Regional Council (Table 5.6) confessed, "Oh yeah, because the costs were not high."

Notwithstanding that some organizations' believed that programme termination was purely an economic decision, their views remain the minority. If as described by Kirkpatrick et al. (1999), a programme is created during times of economic surplus, it should not be a surprise that the same programme, if shown to be an economic liability, is scaled-back or terminated during times of economic difficulty. After all, as Adam et al. (2007) indicate, the greater the pressure for austerity measures, the greater the role that economics will play in programme termination.

However, given that the primary cost associated with the CNPS programme was expended up front, and that operating costs were shunted onto the organizations themselves, it is not likely that the programme was terminated solely for economic reasons, despite the economic downturn. Similarly, as the data have demonstrated, ongoing costs for the CCP-NZ programme membership were not high. And, while in the minority, some organizations indicated that they would have paid the programme membership themselves, thus alleviating Government of the expense.

Exploring the extent to which terminations occurring during President's Reagan's tenure were influenced by economic rationalisation, deLeon (1982a) finds that economics was rarely responsible for programme termination. Likewise, in the case of the CNPS and the CCP-NZ programmes, while economics may have influenced programme termination, given the evidence from the data (and therefore as judged by those implementing the respective programme), economics (deLeon's first rationale) was not likely the cause for programme termination.

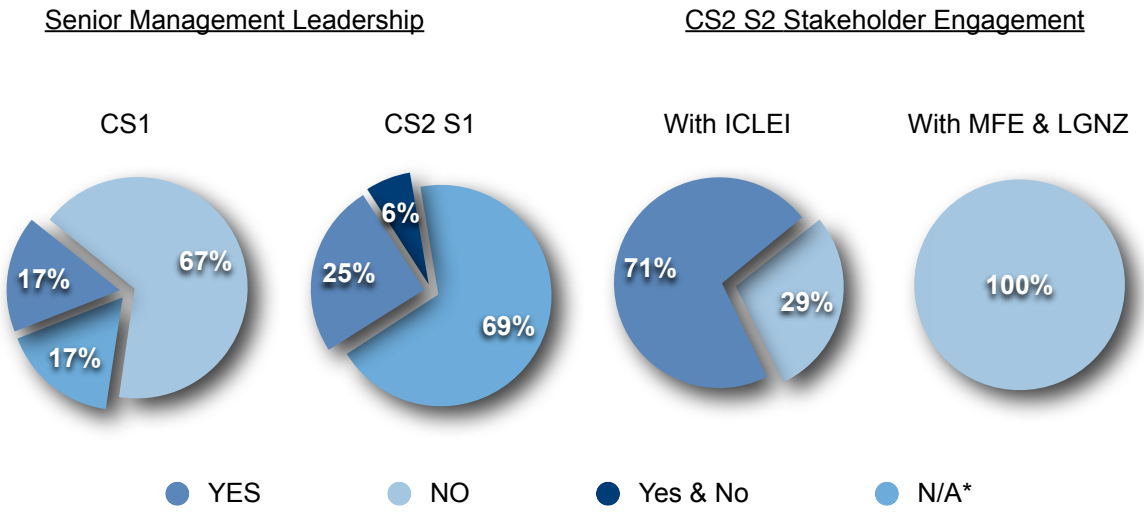
[347] 1 of the 7 CS2 S2 councils confessed that it was too soon to know whether to benefits did outweigh the costs.

### 7.2.2. Programmatic Inefficiencies

DeLeon's second rationale for programme termination relates to programmatic inefficiencies. As highlighted in Chapter 4, a department or agency's inability to deliver on objectives in an efficient and effective manner may result in programme termination (deLeon, 1982a).

Evidence from the data suggested that both the CNPS and the CCP-NZ programmes suffered from serious inefficiencies. With regard to the CS1 lead-core agencies (CNPS programme), given the programme's prominence with the Prime Minister, early traction was anticipated. Ultimately, however, despite senior level lip service: "I guess at a senior level with inside the organizations there was a bit of lip service paid to it – well, a lot of lip service paid to it" (Table 5.4, Treasury),"strong collaborative leadership seemed to be fairly lacking" (Table 5.4, Ministry of Health B); 67% (4 of 6) of ministries indicated that senior management leadership was not strong (Fig. 7.3). As the Inland Revenue Department (Table 5.4) explained, for example, many within the ministry simply did not see climate mitigation as core business.

Figure 7.3: Senior management leadership within the programmes and CS2 S2 stakeholder engagement[348]



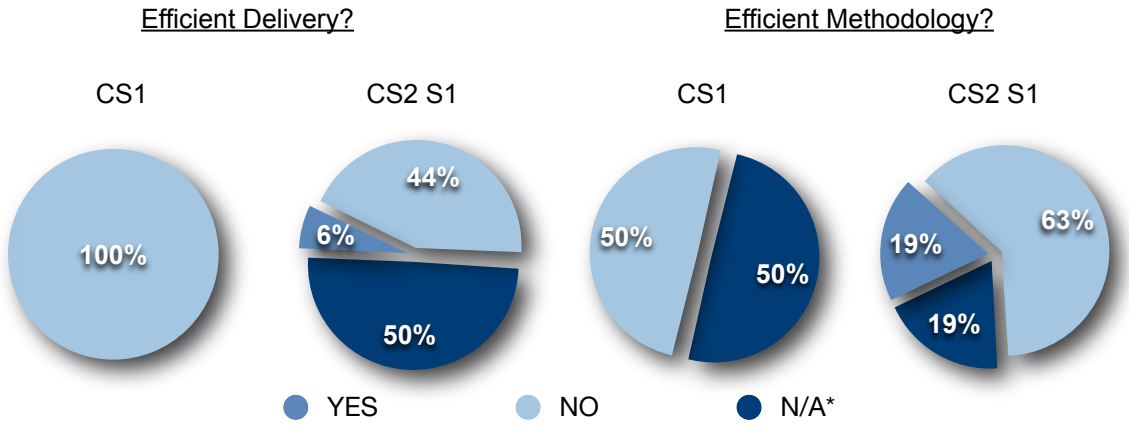

The experience within the CS2 S1 councils (CCP-NZ programme), on the other hand, was the polar opposite. While not all CS2 S1 councils interviewed discussed senior management

[348] See Appendix, Table 6.1, Table 6.7 and Table 6.14, for data sets. *These organizations did not discuss senior management leadership or stakeholder engagement.

leadership, of the five (5 of 16) that did, only one council identified that senior management leadership was lacking. Interestingly, however, 100% (7 of 7) of CS2 S2 councils revealed that neither the Ministry for the Environment nor Local Government New Zealand (key programme partners, as discussed in Chapter 3) were engaged with the programme.

With the above in mind, it is not surprising then, to find that 100% (6 of 6) of CS1 organizations indicated that the CNPS programme was not efficient in its delivery (Fig. 7.4). Though the Ministry for the Environment (Table 5.4) offered a quick launch as the reason for poor delivery: "We had to go out with whatever we had," Treasury (Table 5.4) conceded that "it was all sort of 'make it up' as you go along." Moreover, as Department of Conservation (Table 5.4) indicated, "CNPS should never have been run by MFE." For their part, the Ministry for the Environment did acknowledge that it was difficult to both lead and be a part of the lead-core group at the same time. While programme delivery was not discussed by all CS2 S1 councils, of the 8 councils that did discuss delivery, 7 councils indicated that the CCP-NZ programme was not efficiently delivered. Greater Wellington Regional Council (Table 5.4) explained that the programme's inefficiency was the result of "a combination of the CCP strategy for New Zealand was not the right strategy and the central government hobbling them from the beginning."

Figure 7.4: Efficiency of programme delivery and methodology[349]




As for the CNPS programme's methodology, of the 3 department's that discussed the programme's effectiveness, 3 indicated that the methodology was not efficient or effective. In

[349] See Appendix, Table 6.2 and Table 6.8, for data sets. *These organizations did not discuss the effectiveness of programme delivery or methodology.

terms of the CS2 S1, of the 13 councils that discussed effectiveness, 10 indicated that the programme's methodology was not efficient or effective.[350] Specifically, as Dunedin City Council (Table 5.5) noted, "so it wasn't technically driven… I think that the inventory was a bit simplistic."[351] What's more, while Kaikoura District Council B (Table 5.5) believed that the programme's strength was in its ability to be "tailor-made to any community," Wellington City Council (Table 5.5) argued that the "[the inventory tool] wasn't very flexible." And, according to Waitakere City Council (Table 5.5), the programme failed to remain current:"I don't think CCP maintained or kept up with the maturity that grew within the sector."

The research also demonstrated that programme data requirements were a challenge for both CS1 and CS2 organizations: CS1 organizations indicated that their efforts to create a sound emissions inventory were frustrated by changing scope and inconsistent data requirements, while some CS2 S1 organizations indicated that they had difficulty gaining access to the necessary data: "One of the tricky parts was going back to a certain pre-determined date because we signed on in 2004, but I think the baseline was supposed to be – was it 200[1]" (Table 5.5, Christchurch City Council). Additionally, as indicated by Auckland City Council (Table 5.5), "data quality was definitely an issue."

Interestingly, although not definitive, two of the four councils that discussed whether the CCP-NZ programme transferred well from the parent programme (CCP) in Australia indicated that the programme did not effectively transfer from Australia. While Auckland Regional Council (Table 5.6) cited the CCP-NZ programme's lack of a community focus as the reason why it did not effectively transfer to NZ, Dunedin District Council (Table 5.6) suggested that the programme simply wasn't as well supported or financed in NZ: "[Australia] was throwing money at it and that wasn't going to happen here."

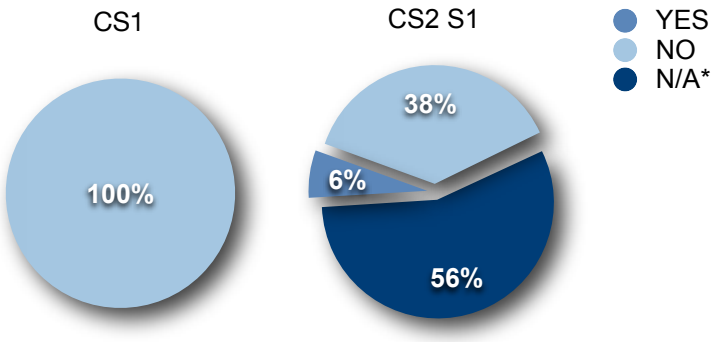
Another attribute that made both programmes inefficient was the lack of formal benchmarking in their carbon mitigation strategy. In the case of CS1, 100% (6 of 6) of the lead-core agencies identified that they did not include a formal benchmark in their

[350] For councils that were visited in both stages of CS2, the results are consistent, i.e. in CS2 S1 and S2, Auckland Regional Council, Greater Wellington Regional Council, Dunedin City Council and Wellington City Council all indicated that the programme's methodology was NOT effective; and, in both stages Southland District Council indicated that the method was sound (Appendix, Table 6. 8, Table 6.15).

[351] With with respect to programme effectiveness, Dunedin City Council (Table 5.6), in CS2 S2, reiterates this point: "No… Probably from an overall concept point of view, but not from an implementation or a reporting point of view."

management plan (Fig. 7.5). According to Ministry for the Environment B (Table 5.4), because no other public sector organization was working towards achieving carbon neutrality, there was no one to benchmark against. While only seven of the 16 councils interviewed as part of CS2 S1 discussed formal benchmarking, six of those seven (38% of the total) indicated that they did not include a formal benchmark in their emission reduction plan. For Wellington City Council (Table 5.5), they offered that because "every council is different… [they] found it quite difficult to benchmark."[352]

Figure 7.5: Occurrence of formal benchmarking[353]

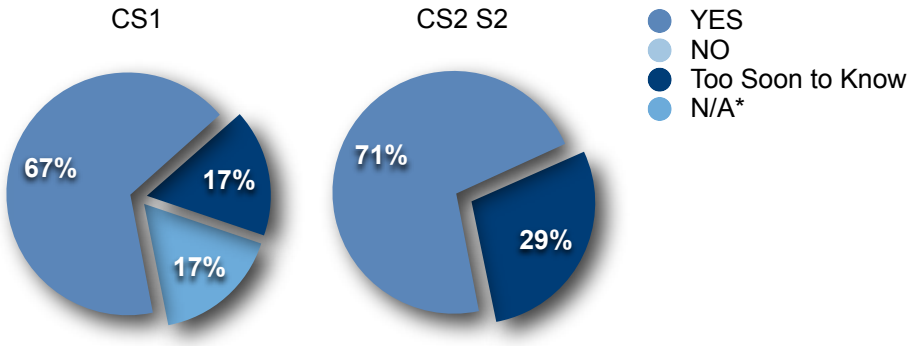



Despite a plethora of inefficiencies, the CNPS and the CCP-NZ programme members identified considerable benefits. Chiefly among the benefits was a reduction in GHG emissions, with 67% (4 of 6) of CS1 organizations and 71% (5 of 7) of CS2 S2 organizations indicating that they did experience emissions reductions: "Yeah, it was huge - it was hugely successful. I mean we were having targets of 20 percent and we were you know meeting those targets" (Table 5.6, Auckland Regional Council) (Fig. 7.6). Cautiously, one of the six CS1 organizations conceded that "it was too soon to tell. And if it had gone for another couple of years, we might have seen something more concrete out of it" (Table 5.4, Treasury). Likewise for two of the seven CS2 S2 councils, as suggested by Wellington City Council (Table 5.6): "At this stage it's too early to tell if CCP had any [emission reductions]."

[352] As noted in Chapter 6, some of the lead-core agencies did benchmark against each other lead-core agencies, but not in a formal fashion (Department of Conservation, Table 5.4.

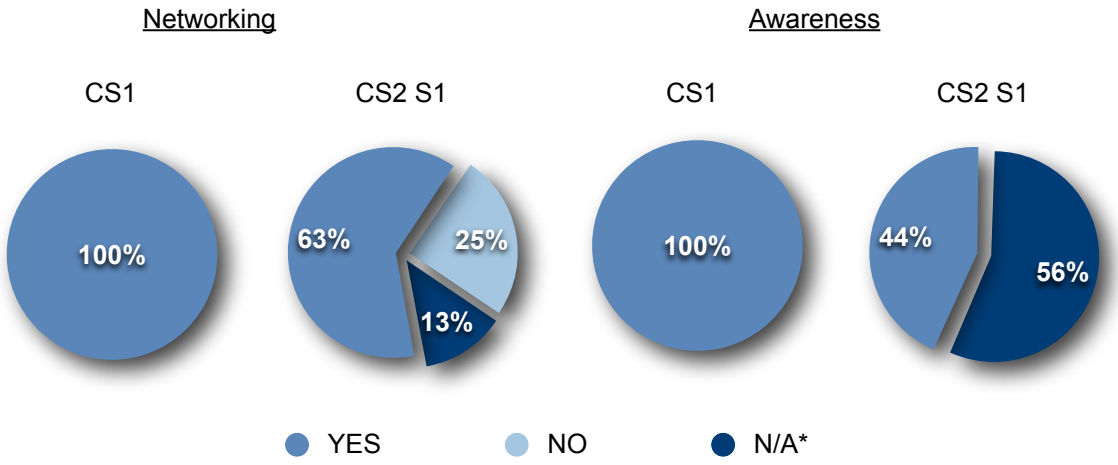
[353] See Appendix, Table 6.2 and Table 6.8, for data sets. *These organizations did not discuss formal benchmarking.

Figure 7.6: Occurrence of emission reductions[354]




Apart from emissions reductions, the CNPS and the CCP-NZ programme member organizations both indicated that because of their participation in the respective programme, they experienced improved inter-departmental networking and raised awareness with regard to climate change and carbon mitigation. As for networking, 100% (6 of 6) of CS1 organizations identified that collaboration was effective, and as suggested by Ministry for Economic Development B (Table 5.4) "[collaboration] was driven right form the start" (Fig. 7.7). In terms of CS2 S1 organizations, 10 of 16 organizations indicated that the networking component of the programme was effective, as explained by Hamilton City Council (Table 5.5): "It pulled people together… you actually get to talk and find out what other people are doing and how they're doing it."[355]

Figure 7.7: Occurrence of networking and awareness-raising[356]




[354] See Appendix, Table 6.4 and Table 6.16, for data sets. *These organizations did not discuss whether emission reductions occurred.

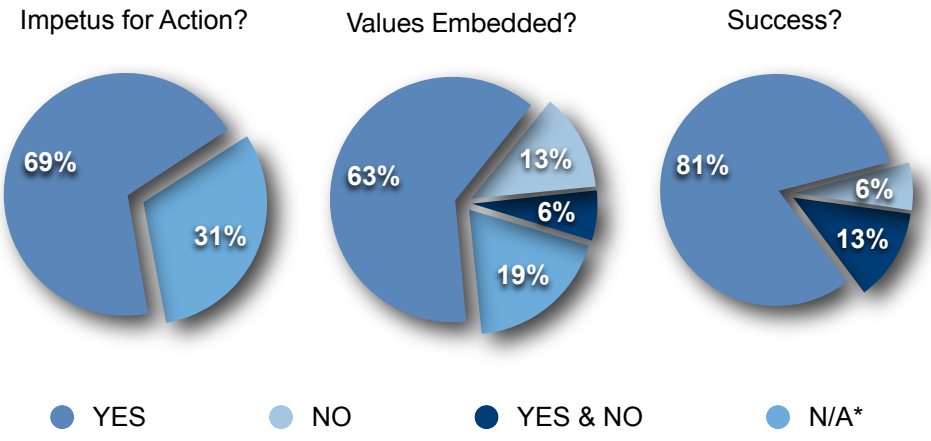
[355] With that said, however, domestic collaboration was not a priority for the bigger councils, who as indicated by Christchurch City Council (Table 5.5) were "learning more from overseas than from within New Zealand."

[356] See Appendix, Table 6.4 and Table 6.10, for data sets. *These organizations did not discuss networking or awareness.

Similarly, awareness-raising was consistently identified by organizations as being an effective component of the respective programmes. As with Networking, 100% (6 of 6) of CS1 organizations identified that the CNPS programme effectively increased management's awareness with regard to how carbon affects the operation of their department: "It is really that thing about that if you do not measure it, you cannot manage it" (Table 5.4, Department of Conservation). While only 44% (7 of 16) of CS2 S1 councils discussed the programme's effectiveness with regard to awareness raising, all seven councils consistently identified it as a co-benefit to participation in the programme, with Far North District Council (Table 5.5) explaining that "[CCP-NZ] created knowledge about opportunities that are there… it galvanised council's actions in relation to the mitigation options."

Ultimately, regardless of the programme's inefficiencies, of the 11 CS2 S2 councils that discussed whether participation in the CCP-NZ programme was their council's impetus for action on climate mitigation, all indicated that in fact it was, with for example, Rotorua District Council (Table 5.5) explaining that "[the programme] has been helpful to take us forward," and Hawkes Bay Regional Council (Table 5.5) suggesting that "[CCP-NZ] has been a driver… and a way of progressing our assessment of our own carbon or emission footprint" (Fig. 7.8).

Figure 7.8: CS2 S1 council determination of whether the CCP-NZ programme was council's impetus for action on climate change; whether the programme's values have become embedded; and, whether the programme was a success?[357]




[357] See Appendix, Table 6.10 and Table 6.11, for data sets. *These organizations did not discuss whether the programme was their council's impetus for action on carbon management, nor whether the programme's values have become embedded within the organization.

And to the programme's credit, as indicated by at least 63% of CS2 S1 councils, the values of the CCP-NZ programme have become embedded in organizational management: "[CCP-NZ] made the way that we manage our energy in this organization more efficient" (Table 5.5, Auckland Regional Council A). Moreover, the programmes's values, as described by Kapiti Coast District Council (Table 5.5), are becoming business as usual: "we're sort of on the cusp of having energy management considered a normal way of doing business here and that's quite a step forward."

In the end, 81% (13 of 16) of councils interviewed for CS2 S1 concluded that the CCP-NZ programme was a success.[358] As Kapiti Coast District Council (Table 5.5) indicated, this was particularly the case: "In terms of getting climate change issues on the agenda of councils it was excellent." As Christchurch City Council (Table 5.5) added "[the programme] was a success in terms of getting the people to understand the basic principles of responding to climate change in mitigation terms." And, as Wellington City Council (Table 5.5) conceded, "I think without it, we would have struggled to put a lot more resources into developing something and probably not as good as what they were able to provide us."

As the literature suggests, government programmes are at risk of termination if it is shown that the desired objectives can be achieved via a more efficient and effective approach (e.g. Enthoven & Smith, 1971). And, as deLeon (1982a) explains, in some instances Federal programmes are dismantled with the belief that state or local government can deliver the programme more efficiently. In the case of the CNPS programme, the new National-led Government believed that the initiatives involved in the programme should occur without requiring a Government-funded programme. Despite Government's belief, however, as identified by Ministry for the Environment A (Table 5.4), these initiatives would not have occurred: "I think that the key point behind that was that the Minister's understanding that [good cost-benefit initiatives associated with] CNPS would happen anyway because it's a

[358] While not the same theme, when CS2 S1 'Success' is compared to CS2 S2 'Summing up Council's Experience with the Programme,' the data becomes inconsistent. In CS2 S1 Auckland Regional Council, Rotorua District Council, Southland District Council, Dunedin City Council, Nelson City Council and Wellington City Council all indicated that the CCP-NZ programme was, YES, a success, and Greater Wellington Regional Council indicated, YES/NO. In 'Summing up Council's Experience with the Programme', and in line with CS2 S1, SC2 S2 data indicated that Rotorua District Council, Southland District Council, Nelson City Council and Wellington City Council all believed that council's overall experience with the programme was POSITIVE, and Greater Wellington Regional Council believed that it was MIXED. Inconsistent with CS2 S1, in CS2 S2, Auckland Regional Council indicated that their experience with the programme was MIXED and Dunedin City Council indicated that it was DISAPPOINTING.

good idea. That is not the case." In fact, now that the programme has been dismantled, 100% of CS1 organizations have abandoned the objective of becoming carbon neutral.[359]

As Botterill (2005) highlights, the lack of efficient and effective support networks can lead to programme termination. This aligns with the data, which show that despite a strong inter-organizational network circle, the CNPS programme suffered from a lack of senior management leadership, and the CCP-NZ programme lacked engagement with programmes' partners (the Ministry for the Environment and Local Government New Zealand).

Because programmes are the operational manifestation of policies, they tend to attract attention more easily (Sato, 2002), and thus if found to be lacking in efficiency or effectiveness are at greater risk of termination. As the data demonstrated, both the CNPS and the CCP-NZ programmes suffered from serious inefficiencies. Despite the assertion of emission reductions and the realisation of significant co-benefits, the inefficiencies associated with the CNPS and the CCP-NZ programmes suggest that programme termination does align with deLeon's second rationale for programme termination (programmatic inefficiencies). For CS2 S1, this conclusion is supported by Greater Wellington Regional Council (Table 5.5), indicating that "I suspect that [Government] just saw [the programme] as ineffective really."

### 7.2.3. Political Ideology

DeLeon's third rationale for programme termination concerns political ideology. As highlighted in Chapter 4, for reasons of political expediency, programmes that do not resonate ideologically with the party in power, are terminated (e.g. Adam et al., 2007; Lewis, 2002; Kirkpatrick et al., 1999).

Given the political shift from a Labour to a National government immediately prior to the termination of the CNPS and the CCP-NZ programmes,[360] it is not surprising that the majority of organizations interviewed believed that political ideology was a motivating factor for the termination of their respective programmes; 67% (4 of 6) of CS1 organizations and

[359] While five of the six ministries are going to continue to manage their carbon, the Inland Revenue Department is in full retreat: "we really sort of are pulling back completely… There is no organizational impetus" (Table 5.4, Inland Revenue Department).

[360] The ideological differences between these two parties and the significance of the shift are explored further in Chapter 8.

63% (10 of 16) of CS2 S1 organizations believed that ideology was the reason for programme termination (Fig. 7.1).[361]

In terms of CS1, Ministry for the Environment B (Table 5.4) identified that the new National Government did not see carbon neutrality as a priority. Department of Conservation (Table 5.4) went further, adding that "clearly [National] do not see climate change as a serious threat." Moreover, Ministry for the Environment A (Table 5.4) conceded that "the Minister [for the Environment and Climate Change Issues (Nick Smith)] had been explicit in his dislike of the programme when he was in opposition." In a similar fashion, with regard to CS2 S1, Kaikoura District Council B (Table 5.5) concluded that "[National] just didn't see green programmes as a priority," with Nelson City Council (Table 5.5) suggesting that Government saw the CCP-NZ programme as a "'nice to do' rather than a 'need to do.'"

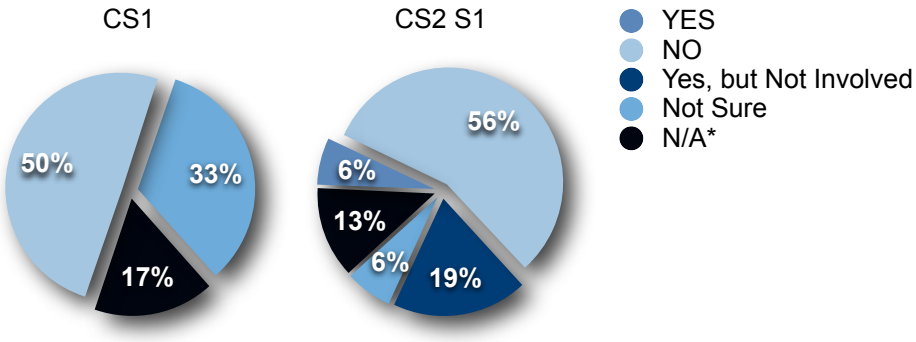
Sato (2002) notes that a shift in ideology or scientific theory can motivate termination. While, as the data suggests, the National Government did not see carbon mitigation as a priority for New Zealand, global scientific consensus with regard to climate change and carbon mitigation supports the ethos of programmes like the CNPS and the CCP-NZ programmes.

What's more, the majority of organizations interviewed for CS1 (50%, 3 of 6) and CS2 S1 (56%, 9 of 16) believed that, prior to programme termination, Government did not perform a formal evaluation into the respective programmes' effectiveness (Fig. 7.9).[362] In terms of the CCP-NZ programme, the host council (Wellington City Council) wasn't even consulted: "I don't think that we were asked from the central government whether it was effective" (Table 5.5, Wellington City Council). And as indicated by Department of Conservation (Table 5.4), though the dismantling of the CNPS programme was too quick to allow for a formal evaluation, it was clear that a decision had been made: "I do not think that it would have mattered what we put up, a decision had been made."

[361] 16% (1 of 6) of CS1 organizations and 6% (1 of 16) of CS2 S2 organizations reasoned that their respective programme was terminated for both political and economics reasons.

[362] 33% (2 of 6) of CS1 and 6% (1 of 16) of CS2 S1 organizations were not sure; 17% (1 of 6) of CS1 and 13% (2 of 16) of CS2 S1 organizations did not discuss whether Government had performed a formal evaluation of the respective programme's effectiveness prior to termination.

Figure 7.9: Occurrence of a formal programme evaluation[363]




In the end, while Dery (1984) argues that the common trouble with programme evaluation is the lack of standards by which to assess programme effectiveness, in the case of the CNPS and the the CCP-NZ programmes, no formal evaluation occurred. And though deLeon's (1982a) observation that ideology is the chief rationale for programme termination explains the absence of a formal evaluation, the determination of a programme's effectiveness is ultimately a function of political disposition (e.g. Adam et al., 2007). Given the evidence from the data, the termination of the CNPS and the CCP-NZ programmes does align with deLeon's third rationale for programme termination, political ideology.

## 7.3. Summary and Locating the Research

### 7.3.1. Summary of Chapter 7

According to deLeon (1982a), programme termination is considered to have three rationales: economics (cost reduction); programmatic inefficiencies; and, political ideology. After applying deLeon's model to the results from the semi-structured interviews for CS1, CS2 S1 and CS2 S2, it is clear that the termination of the CNPS and the CCP-NZ programmes was influenced by all three of deLeon's rationales for programme termination.

With the onset of the global recession, and the resultant pressure for Government austerity measures, some organizations (CNPS, 17%; CCP-NZ, 25%) believed that programme termination was purely an economic decision. Interestingly however, while programmatic inefficiencies were clearly evident and detrimental to both programmes, as is made clear from the narratives, few organizations (CNPS, 0%; CCP-NZ, 6%) identified this as the cause for programme termination. Instead, and given the recent political shift in Government

[363] See Appendix, Table 6.3 and Table 6.9, for data sets. *These organizations did not discuss whether an evaluation occurred.

leadership, not surprisingly, the majority of organizations (CNPS, 67%; CCP-NZ, 65%) argued that programme termination was the result of political ideology. This notion is supported by the lack of evidence for the occurrence of a formal evaluation into the effectiveness of the two programmes, which suggests that the decision to terminate was politically motivated as opposed to assessment-driven.

Typically, as the literature suggests (e.g. Cameron, 1978; deLeon, 1982a, 1987; Frantz, 2002; Lewis, 2002; Adam et al. 2007), while economics and inefficiencies are cited openly as motivating programme termination, in practice, political ideology tends to be responsible for the majority of government terminations. While this trend rings true in this research, as the data demonstrates, elements of all three of deLeon's rationales for programme termination were present in the dismantling of the CNPS and the CCP-NZ programmes.

### 7.3.2. Locating the Research

As the previous chapters have identified, there is a paucity of scholarly work exploring how public sector organizations determine strategies to manage their carbon and achieve carbon neutrality. While analysis of the themes emerging from the case studies provides an appreciation for the study organizations' overall experience with the CNPS and the CCP-NZ programmes (see Chapter 6), considering these themes through the lens of deLeon's Termination Theory provides insight into the rationale for programme termination.

# CHAPTER 8 - DISCUSSION

## 8.1. INTRODUCTION

### 8.1.1. Introduction to Chapter 8

A qualitative methodology was chosen for this study because of the need to extract the personal narratives of the managers responsible for CNPS and the CCP-NZ programmes. Qualitative inquiry is however, inherently difficult to replicate (Liamputtong, 2011), and thus tends to attract positivist criticism. Nonetheless, this approach effectively allows the researcher to explore meaning, interpretations and individual experiences, all of which are critical in order to better understand the dynamics influencing the termination of the CNPS and the CCP-NZ programmes.

The narratives, including insights into meaning, interpretations and individual experiences with the respective initiatives will be discussed here. Additionally, as this research is interested in understanding not only why the CNPS and the CCP-NZ programmes were dismantled, but also what programme participant organizations intend do next, the organizational structure of this chapter serves to highlight and extract the data in a manner that emphasizes programme evolution: In the beginning, delivery and application, termination, outcome and moving forward.

While Chapter 6 presented the findings from the interviews with the respective senior managers responsible for the delivery of the CNPS and the CCP-NZ programmes, and Chapter 7 considered these findings through the theoretical lens of termination theory, this chapter draws on all the research findings and secondary materials. In addition to the findings from Chapter 6, this includes findings from interviews with the programme architects, word count analysis of CS2 S2 organization Annual Reports, Annual Plans, and LTCCPs, and other support material such as ministry and council emission inventories and reduction plans, and Government press documents.

### 8.1.2. Chapter Purpose and Outline

The aim of this chapter is to analytically discuss the various themes that emerged from the research, namely the findings presented in Chapters 6 and 7. While direct attention to how the

research findings address the research objectives will be discussed in the following chapter, elements are nevertheless presented in this chapter as well, particularly with respect to the evolution of the CNPS and the CCP-NZ programmes.

This chapter is divided into six primary sections, (8.1) Introduction, (8.2) In the Beginning; (8.3) Delivery and Application; (8.4) Termination; (8.5) Outcome and Moving Forward; and, (8.6) Summary and Locating the Research. Section 8.1 provides a quick introduction to the chapter, including a description of the chapter's purpose. Section 8.2 begins with a broad discussion of the Labour-led Government's ambition for sustainability and climate mitigation, then focuses on the CNPS and the CCP-NZ programmes, exploring programme aim and, with respect to latter programme, ICLEI's recruitment strategy. Section 8.3 discusses the overall delivery and application of the CNPS and the CCP-NZ programmes, highlighting some of the key programatic pitfalls experienced by participant organizations. Section 8.4 discusses the rationales for, and obstacles against, the termination of the CNPS and the CCP-NZ programmes. Section 8.5 explores the success of the CNPS and the CCP-NZ programmes, including a discussion on the embeddedness of programme values, and concludes with a brief consideration of NZ's path forward on carbon mitigation. The final section, section 8.6, provides a brief summary of the chapter and locates the chapter with the thesis.

## 8.2. IN THE BEGINNING

### 8.2.1. Labour's Ambition

The CNPS and the CCP-NZ programmes grew out of the Labour-led Government's desire to make "sustainability central to New Zealand's unique national identity" (Clark, 2006). This came at a time when sustainability and climate change were featuring predominantly on international agendas (e.g. Pinkse & Kolk, 2009; Bailey, 2007; Boston, 2008), and Labour wanted to be bold in this area: "we could aim to be carbon neutral" (Clark, 2006). Labour believed that carbon neutrality was "the way the world [would] move" and thus wanted to seize the "opportunity to be at the forefront" (Clark, 2007c) of this global effort.

While NZ's contribution to global GHG emissions is low (0.2%), it has the 11th highest emissions per capita (NZ Govt., 2009c). What's more, NZ is among the developed nations

with the greatest net emissions increase (23%) since 1990 (NZ Govt., 2009b) (Fig. 3.3). NZ's increase in emissions is largely the result of two sectors, agricultural and energy, which dominate NZ's unique emissions profile. The contribution of agriculture and energy are unique for two key reasons. First, over the last two decades NZ's energy use per capita has been increasing, where per capita energy use for most of the developed world has been decreasing (Renowden, 2007). Second, agriculture represents approximately 50% of NZ's total national emissions profile, as compared to the developed-world average of 10% (NZ Govt., 2009b).

Notwithstanding the fact that this trend does seem to be in decline, given that agriculture represented 51% of NZ's total emissions in 1990 and 46% in 2009 (NZ Govt., 2011c) (Fig. 3.6), by weight, it continues to rise, largely the result of enteric fermentation CO2 emissions from dairy cattle and N2O emissions from agricultural soils (NZ Govt., 2011b). This trend places NZ in a paradox: while 95% of all agricultural production is exported, with the sector accounting for 54% of total exports in 2005 (MFAT, 2010), Labour did not want to damage NZ's international reputation or be seen as doing too little about emissions:

> New Zealand is serious about climate change. We've got a problem – the world needs our food, but as we produce our food we create greenhouse gases, that's a problem we've got to try and solve… if New Zealand gets a reputation for being a dirty producer, a greenhouse gas polluter – a country that doesn't care, you're going to see it as a pariah... We don't want people boycotting New Zealand (Table 5.4, Clark).

To this end, and reiterating that "NZ did the right thing in ratifying the Kyoto Protocol, and resolving to be part of the solution, not part of the problem" (Clark, 2006), the Prime Minister announced a raft of sustainability initiatives, including an economy-wide emissions trading scheme, designed to make sustainability central to NZ's unique national identity (Clark, 2006). Principally, Labour believed that the world was moving towards carbon neutrality (Clark, 2007c), and wanted NZ "to be in the vanguard of making it happen" (Table 5.4, Clark). As a first step, Labour wanted to put Government's house in order: "If we are going to tell Kiwis that our country can be carbon neutral, let's use Government Departments in a leadership role, and show that it can be done" (Table 5.4, Clark).

Nevertheless, Labour's ambition was challenged by the opposition, who believed it unnecessary and economically dangerous to get ahead of other countries that may have a greater mitigative impact or more to lose (e.g. Chapman, 2006). As the literature suggests, the economic and social cost may be outweighed by the insignificance of the country's overall contribution to atmospheric GHG emission accumulation (e.g. Macey, 2007). For the Prime Minister, however, "…Everything about having a carbon neutral public service made sense, it saved money; so it wasn't only good for the environment, it was good for the bottom line of the Government's budget" (Table 5.4, Clark).

### 8.2.2. The Aim of the CNPS and the CCP-NZ Programmes

The CNPS programme was a Government mandated initiative. While the programme's intent was to achieve carbon neutrality within the core public sector, its aim was ultimately to demonstrate NZ's leadership on climate change and carbon neutrality (NZ Govt., 2007b). Additionally, Government wanted to demonstrate to organizations (both public and private) a practical methodology for achieving carbon neutrality.

The CCP-NZ programme, on the other hand, was neither mandated by Government nor a carbon neutrality initiative. Instead, in joining the CCP-NZ programme, local government councils sought to achieve quantifiable GHG emission reductions (corporate and within the community) and, similar to the core departments, demonstrate leadership to the community on climate change mitigation (CCP-NZ, 2009).[364] As ICELIb (Table 5.5) explains, the programme's framework provided councils with a method to reduce emissions: "So I guess the core value of a programme like CCP is that it allows local governments to take a very complex set of issues and simplify them into a straight forward step process." And importantly, as ICLEI A (Table 5.5) notes: "This helps you lay the ground for policies that are going to be harder for the public to accept in the future because it will give them examples of what they can do. It will give them confidence that they can do something."

Interestingly, while the CCP-NZ programme was not a carbon neutrality initiative, some councils did endeavor to achieve carbon neutrality; of the 8 councils that discussed their goal

[364] Incidentally, while the findings suggested that councils were disappointed with the programme's lack of an adaptation component, ICLEI never indicated that adaptation was indeed a part of the programme's aim. Moreover, while local government responsibility for adaptation is more obvious, with the passing of the Energy and Climate Change Amendment to NZ's Resource Management Act in 2004, increased responsibility for mitigation was passed to local authorities (Greenaway & Carswell, 2009). Exactly how these responsibilities are manifested, however, remains unclear.

in joining the programme, five expressed a desire to achieve carbon neutrality (Appendix, Table 6.6). Here the data conflicts slightly. While CS2 S1 findings suggested that Wellington City Council was in fact aiming for carbon neutrality (Appendix, Table 6.6), findings from CS2 S2 revealed that Wellington City Council did not initially have carbon neutrality as their aim, though it did come later (Appendix, Table 6.13). ICLEI B (Table 5.5) concurred with the former findings, and added that Wellington City Council's goal was pure hubris and naiveté:

> Wellington wanted to become the world's first carbon neutral city. Then realised that they had miscounted and it was going to cost them a lot – F*#@% naïve… Wellington is a good example, where they just over-reached and they were doing it in New Zealand a bit. It's a real Kiwi thing.

Not surprisingly the National Government felt the same about Labour's vision of NZ having the world's first carbon neutral public service. ICLEI B (Table 5.5)'s criticism is not driven by ideology, however: "The world's first is bullshit – it should be about where are we now; how we can be better?"

As for demonstrating leadership to the community, of the 14 councils that discussed the role of leadership in joining the programme, while one council indicated that leadership was not a driver, 13 indicated that they were striving to demonstrate leadership to the community (Appendix, Table 6.6). Wellington City Council (Table 5.5), for example, explained that: "We wanted to show the community that we were taking the issue seriously and we wanted to help the community with programmes that also facilitated them to take action whether its residents or businesses."

### 8.2.3. Timing and Recruitment

In terms of timing, Government launched the CNPS programme in 2007 as part of a larger sustainability initiative. As for the CCP-NZ programme, the data shows that councils were in the process of exploring climate mitigation at about the same time that ICLEI was gathering support and meeting with prospective programme members:

> [Climate change] definitely wasn't a priority for the council until it joined the CCP Programme... So it was an issue that the council was considering and it was kind of timely that ICLEI was also going around talking to councils about their programme (Table 5.6, Wellington City Council).

According to ICLEI B (Table 5.5), councils were quite keen to join the programme:

> So when I went over to New Zealand and talked about what we were setting up here in Australia, New Zealanders [were] very interested ... We then started recruiting councils and we recruited them very quickly and to MFE that was seen as the market speaking… So the fast recruitment and we pushed it really hard was kind of proof that the market was saying, "yes, we want CCP."

And as ICLEI B (Table 5.5) indicated, "[the programme] very quickly got momentum."[365] The first year of the programme saw the greatest uptake in membership, with 35% of the total membership joining in 2004 (Fig. 3.21); 44% of the 16 study selection councils joined in 2004 (Fig. 5.2; Fig. 5.3). Interestingly, and perhaps linked to Labour's launch of CNPS programme (though this was never mentioned in the interviews), 2007 saw the next largest wave of membership, with 29% of total membership and 25% of the study selection.

Also of note, the bulk of councils that joined in 2004 (and in 2007) were District Councils. Had time (and access to key personnel) permitted, it would have been interesting to explore deeper into ICLEI's recruitment strategy, particularly given that, as Local Government New Zealand (Table 5.5) indicated, "[the recruitment strategy] was very weighted towards those authorities with larger populations." This would imply that city councils were the primary target, and begs the question, of those councils approached by ICLEI, how many ultimately joined the CCP-NZ programme.

Perhaps not surprisingly, the findings suggested that ICLEI sought to sign-up as many councils as possible.[366] What's interesting about ICLEI's strategy, however, is that performance objectives were centred around the number of councils participating in the programme as opposed to their progression through the five-milestone framework (Table 5.5, ICLEI A)[367]. While this suggests that ICLEI's ambition was public relations related (quantity over quality), which in fact was the belief held by Local Government New

[365] ICLEI B (Table 5.5) notes that the larger councils in particular were very keen to act on climate mitigation, they were just unsure what to do - CCP provided the framework for action.

[366] ICLEI B conceded that the programme was not likely to grow any further, given the percentage of NZ's population (83%) already represented by programme member councils: "you know with that percentage of population and that number of councils you're not going to get many more" (ICLEI B, Table 5.5).

[367] Incidentally, only 6% of participant councils completed the final milestone by the time the programme ended in 2009 (Fig. 3.23).

Zealand,[368] it is supported by the fact that 45% of participant councils did not move beyond the first milestone.[369]

With that said, the lack of progression beyond the first milestone may be less about ICLEI's shortsighted performance objectives and more about councils' laggardness. After all, Government funded the interns who's sole task was to develop the inventory necessary to achieve M1. As such, once the funding was gone, councils may have lost the drive to continue at their own expense, given the abundance of pressing priorities. Alternatively, the lack of forward movement may have been the result of the programme simply ending prematurely, as is suggested by the fact that 38% of councils joined the programme between 2007 and 2008 - it would take at least one year to achieve M1 after all.

### 8.2.4. Climate Change Policy Prior to Programme Participation

Though not labeled a climate change policy, before mandated to join the CNPS programme, Government agencies were involved in the Govt$^3$ programme, which aimed to gather data related to energy and transport use. CCP-NZ, on the other hand, as indicated by Local Government New Zealand (Table 5.5), "would have been something that was driven from outside of New Zealand," implying that perhaps climate change thinking was not high on NZ councils' agenda. Yet of the 11 SC2 S1 councils that discussed whether climate change thinking was part of council policy prior to joining the CCP-NZ programme, all indicated that indeed it was (Appendix, Table 6.6).

Granted, for some councils, climate change mitigation was not necessarily the primary goal of their policies. Instead, as indicated by Environment Canterbury Regional Council (Table 5.5): "I think we don't really talk about it directly in terms of carbon, but certainly talk about it in terms of savings." And ICLEI must have been aware of this disposition, given that as Local Government New Zealand (Table 5.5) indicated, "[the programme] was promoted as a cost saving sort of thing" as opposed to strictly GHG emission mitigation. While local governments are beginning to appreciate the business case for carbon management (Kousky

[368] Local Government New Zealand (Table 5.5) suggested that "[the programme] was a bit too public relations orientated."

[369] While the programme's goal was to help local government councils quantify their GHG emissions (M1), it was also to build off M1 and achieve quantifiable GHG emission reductions.

& Schneider, 2003; Greenaway & Carswell, 2009), actions must compete with other responsibilities shunted from the Government:

> Councils have had decades of increasing responsibilities to take up without funding to follow, so they themselves have found it extremely difficult to undertake new programmes that aren't legislatively – that aren't required (Table 5.5, ICLEI A).

What's more, four of the same councils that were interviewed as part of CS2 S2, one year later, indicated that council policy did not include climate change thinking prior to joining the programme (Appendix, Table 6.13). And of those that indicated that climate change thinking was present before they joined the programme, all suggested that it was in the form of either sustainability or energy management and adaptation. This suggests that councils' interpretation of climate change policy varies across local government and is thus highly subjective.

To get an idea of whether climate change thinking was part of council policy prior to joining the CCP-NZ programme, this research included a look at local government Annual Reports for CS2 S2 organizations. The findings from word count analysis suggested that 'climate change' was mentioned in only 28% (2 of 7) of Annual Reports in councils' first year of membership in the programme, with no mention of 'carbon management' or 'carbon neutrality' in the same respective first year (Fig. 6.1).[370] And, 'Communities for Climate Protection - New Zealand programme' (or 'CCP-NZ') was also only mentioned in 28% (2 of 7) of Annual Reports in councils' first year of membership in the programme. This suggests that council policy prior to joining the programme was weak with regard to climate change in general and carbon mitigation specifically. Moreover, as ICLEI B (Table 5.5) revealed, while Local Government New Zealand eventually came on board and supported the CCP-NZ programme, initially, "they were a bit of a blocker... So Local Government New Zealand firstly had some councillors of course who were sceptical. Secondly, didn't understand the need for a programme." Because the interviewee representing Local Government New Zealand was not on staff when the CCP-NZ programme began, they were not able to speak to ICLEI B's claim. Given the evidence from CS2 S2 word count analysis, it would appear that

[370] Because Annual Reports for some CS2 S2 councils were not available for the years prior to joining the CCP-NZ programme, I was not able to generate a trend for the period prior to councils' first year of membership.

Local Government New Zealand was not promoting the need to incorporate climate change thinking into council policy.

## 8.3. DELIVERY AND APPLICATION

### 8.3.1. Delivery of the CNPS and the CCP-NZ Programmes

In Labour's haste to launch the CNPS programme, critical building blocks were overlooked and as a result the programme met challenges along the way. The findings suggested that the programme was poorly delivered. Whether defending the programme, or simply explaining circumstances, Ministry for the Environment B (Table 5.4) indicated that the programme was an 'idea that was developed over a short period of time at the beginning of 2008 in time for a Prime Minister's speech from the throne." And while the expectation was that the programme would develop and mature over time (e.g. NZ Govt., 2007b), the Inland Revenue Department (Table 5.4) acknowledged that "it was sort of make it up as you go along."

Perhaps the greatest challenge was the failure of the programme to effectively connect with senior management: "strong collaborative leadership seemed to be fairly lacking" (Table 5.4, Ministry of Health B). Senior management play a critical role in the design and execution of new initiatives. Had senior management been more effectively engaged in the CNPS programme, those charged (lead-core agencies' managers) with the delivery and application of the programme would have met fewer obstacles.[371]

On the other hand, perhaps the CNPS programme would have enjoyed greater success had it not been delivered by the Ministry for the Environment. For all their bravado and confidence in their ability to deliver the programme,"because the Ministry for the Environment had the expertise – the Ministry for the Environment were the logical people" (Table 5.4, Ministry for the Environment B), the Prime Minister later conceded that "the Ministry for the Environment hasn't been a strong ministry" (Table 5.4, Clark). This sentiment was supported openly by at least one lead-core department, who suggested that the programme would have

[371] As noted in previous chapters, many within the Inland Revenue Department, for example, did not accept climate mitigation as core business, and therefore did not approach the CNPS programme with enthusiasm (Table 5.4, Inland Revenue Department).

been better placed with the Energy Efficiency and Conservation Authority (who did in fact offer to run the programme) (Table 5.4, Department of Conservation).[372]

In spite of the obstacles, the CNPS programme did enjoy considerable leadership from the Prime Minister. Because of the Prime Minister's keen interest in the programme, private sector organizations affiliated with the lead-core agencies were beginning to fall in line with the goal of carbon neutrality, thus supporting the notion that the Government was showing leadership. Unfortunately...,

> Feedback from private sector suggests now that Government is no longer involved in CNPS programme, those "corporates and businesses that were inclined to go down this path are not now doing so because Government is not doing it" (Table 5.4, Ministry for the Environment A).

While further research into the accuracy of this assertion would be necessary in order to make any definitive judgements, it remains quite telling anecdotally.

As for the CCP-NZ programme, while senior management leadership does not appear to have been a problem (Fig. 7.3), the programme did lack a clear champion,[373] which as the literature suggests, can hinder the actualisation of a climate control agenda (e.g. Bartlett & Dibben, 2010). Moreover, notwithstanding funding to support an intern and pay programme membership fees, Government support for the initiative was also lacking:

> And we know on climate change activities they're not supported in New Zealand to the same extent that they are in Australia – I know that. I mean in terms of what's happening in local authorities there's just nothing – we just get this huge vacuum of support (Table 5.5, Local Government New Zealand).

This is further substantiated by the interview findings, which indicated that 100% (7 of 7) of CS2 S2 organizations believed that the Ministry for the Environment was not engaged when it came to council involvement with the CCP-NZ programme (Fig. 7.3).[374]

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[372] The notion that the CNPS programme was poorly delivered is substantiated by Fig. 7.4, which indicates that 100% of the lead-core departments believed that the programme was poorly delivered.

[373] According to Local Government New Zealand (Table 5.5), "There are very few local authorities who have a nominated climate change policy person."

[374] This was likewise the case for Local Government New Zealand (Fig. 7.3). As the findings suggested, the majority of councils interviewed for CS2 S1 that discussed the efficiency of programme delivery, concluded that the programme was not delivered in an efficient manner (Fig. 7.4).

Communication between Local Government New Zealand and the Ministry for the Environment was also unproductive, particularly with regard to climate initiatives such as the CCP-NZ programme: "What we tried to do at the time was initiate a conversation with [the Ministry for the Environment] about setting up a... brokerage for a lot of information and ideas and best practice and stuff like that... you know we may as well just gone away and buried ourselves somewhere. We just can't get central government to engage" (Table 5.5, Local Government New Zealand). This was likewise the case between Government and ICLEI as well: "So I don't think ICLEI got involved with [the Ministry for the Environment] to say, 'Right, here's an ICLEI/ MFE programme,' so they didn't integrate very well like that" (Table 5.6, Dunedin City Council).

Unlike their experience with the Ministry for the Environment, the majority of councils did enjoy engagement with ICLEI (Fig.7.3). With that said, however, ICLEI's administrative arm in NZ quickly began to deteriorate soon after the programme began, leaving councils without support and decreasing value in their membership:[375]

> Oh, I don't think [ICLEI] were engaged at all. Well, to be honest ICLEI was a bit of a joke anyway.... and you know the support that they gave was minimum and random and not very professional at times. I mean I think ICLEI in Australia was doing a wonderful job, but we really weren't getting any useful information out of ICLEI New Zealand. They were under-resourced, understaffed and they weren't adding a lot of value (Table 5.6, Auckland Regional Council).

Specifically, the problem surrounded the National Programme Manager (ICLEI A). ICLEI A, while politically adept, lacked the resolve and leadership necessary to lead the programme: "Well, it's a leadership problem and even that's a little bit you know, it's really a single person... and I think that [ICLEI B] knew that there were issues as well" (Table 5.5, Local Government New Zealand).[376] In fact ICLEI B was quite aware of the problem, as conceded later in our discussion: "I guess [ICLEI A] wasn't technically strong."

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[375] Perhaps another angle of inquiry could explore the spatial dimension to ICLEI NZ's level of engagement. The findings suggested that perhaps ICLEI's point person based in Wellington was in more frequent contact with councils that were near to Wellington, i.e. Rotorua District Council, Nelson City Council, Greater Wellington Regional Council and Wellington City Council for example (Appendix, Table 6.14).

[376] This claim is supported by the interview findings as well, where it is noted that "people didn't find [the contact] easy to work with" (Table 5.6, Greater Wellington Regional Council)... "there were definitely some personality conflicts" (Table 5.6, Wellington City Council).

What is also telling is that while Local Government New Zealand (Table 5.5) revealed that when it came to discussions with ICLEI A "there was a distinct unwillingness to listen," as it was ICLEI B's failure to communicate with the consultants charged with selecting the National Programme Manager that led to ICLEI A being hired in the first place; The consultant was prepared to advise against ICLEI A, believing that they were unsuitable for the position. But ICLEI B had already offered ICLEI A the post. Reflecting, ICLEI B (Table 5.5) explains: "You know too bad, we've followed a process here and f*#@% up basically." The reality is, however, that ICLEI B did not follow the process, otherwise they would not have hired ICLEI A in advance of the consultants recommendation. This is further evidence of an endemic breakdown in the CCP-NZ programme's administrative architecture.

### 8.3.2. Application of the CNPS and the CCP-NZ Programmes

In application, both the CNPS and the CCP-NZ programmes suffered from a number of methodological problems. For the CNPS programme, principal among these challenges was the Ministry for the Environment's inability to remain consistent. In spite of Government's assertion that the programme was "the only comprehensive central government programme with robust systems and methodologies to work through the challenges posed by a public service carbon neutrality programme" (NZ Govt., 2008), the Ministry for the Environment would "change their mind about what they wanted measured" (Table 5.4, Ministry for Economic Development A), or indicate that they provided the wrong conversion factors, so calculations would have to be done again (e.g Table 5.4, Treasury). While this would be more frustrating than limiting, departments were also challenged by data availability and the lack of experience (and guidance from the Ministry for the Environment) to gather data correctly. Given the Government's need for ISO compliance,[377] it would be interesting to further explore the core agencies inventories, specifically with regard to completeness, consistency and accuracy, the key tenants of the Greenhouse Gas Protocol, and to assess the efficacy of the programme beyond the narratives.

The CCP-NZ programme suffered a similar experience, particularly with regard to data quality, but also with respect to the programme's approach. Referencing the fact that the CCP initiative failed to materialise in Europe, and suggesting that ICLEI International lacks

[377] Compliant to ISO 14064-1 (ISO, 2006).

technical substance, ICLEI B (Table 5.5) asserts that the Australian programme was of high standard. As for the NZ extension of the programme, which was intended as a replica of the Australian parent programme, implementation was weak: "So CCP-NZ being designed by us had the same approach technically. I don't think the implementation was anywhere near as strong as here [(Australia)]" (Table 5.5, ICLEI B). And even though ICLEI B (Table 5.5) conceded that the National Programme Manager was largely responsible for the programme's decline, the programme's inventory tool was "quite light" (Table 5.5, Dunedin City Council) and moreover failed to remain current: "the tool that we used was becoming obsolete. It wasn't refined enough and in actual fact, it had reached the end of its life" (Table 5.5, ICLEI A).

Recognising the deficiencies of the programme, ICLEI developed a protocol document that was intended to address NZ councils' unique needs and improve the functionality of the inventory tool (the CCP GGA Software).[378] Unfortunately, as ICLEI A (Table 5.5) explained, the protocol was inconsistent with the original tool's methodology. While it remains unclear why the inconsistency was not addressed prior to the protocol's delivery, ICLEI was in the process of correcting the problems when the programme was cancelled: "with the CCP programme being pulled that stopped too" (Table 5.5, ICLEI A).

Another failure of both programmes was the lack of formal benchmarking (Fig. 7.5). While the GGA software was intended to facilitate comparison and benchmarking within the CCP-NZ programme and between the larger pool of CCP participants (e.g. CCP-NZ, 2009), the majority of councils indicated that benchmarking was not practical, so they simply did not include it in their carbon mitigation effort. This is likely a failing of the councils as opposed to the programme itself however, given that the software at the heart of the programme did indeed allow for comparison. With that said, though the programme endeavoured to follow "certain principles" (ICLEI, 2008a) from the WRI/ WBCSD GHG Protocol, councils indicated that they had difficulty gathering consistent data (garbage in garbage out), thus rendering cross-council comparison difficult.

[378] As discussed in Chapter 3, the New Zealand Supplement to the International Local Government GHG Emissions Analysis Protocol was intended to help councils build accurate inventories and facilitate comparison between communities. Again, GGA refers to the Greenhouse Gas Application software.

As for the CNPS programme, the lack of formal benchmarking appears to have been a more endemic problem, with Ministry for the Environment B (Table 5.4) explaining that "nobody else was doing it," implying that there was in fact no public sector organization to benchmark against. However, it is not clear how Government came to this conclusion, given that at the same time that the Ministry for the Environment was conceptualising the CNPS programme, the provincial government of British Columbia (BC), Canada, had already introduced legislation requiring all public sector organizations to become carbon neutral (this effort was further bolstered by a $75 million commitment in 2008) (BC MOE, 2011).[379]

## 8.4. TERMINATION

### 8.4.1. Rationales for Programme Termination

Chapter 7 applied deLeon's model for programme termination to the findings from CS1 and CS2. While the data suggested that the CNPS and the CCP-NZ programmes were both dismantled for reasons of political ideology, it was clear from the narratives that programmatic inefficiencies were endemic, and thus possibly played a role in termination. Yet the new National-led Government cited conventional neoliberal economic ideology as the rationale for ending the initiatives. Unfortunately, due to limited access to finance information, it was not possible to critically assess the cost/benefit relationship of the programmes beyond insights gained from the participants.[380]

**Economics**

With that said, as for the CNPS programme, as expressed in Birchall et al. (2012), it is possible to glean potential costs from existing data, including lead-core agency emission reduction projections as published in their emissions reduction plans (e.g. DOC, 2007; IRD, 2008; MED, 2008; MFE, 2008; MOH, 2008; Treasury, 2008). A further complication, however, concerns the fact that only two of the six lead-core agencies employed a consistent metric for anticipated emissions reductions; for the period 2008-2012, the Department of Conservation anticipated emission reductions were 19% (1837t-CO2e), and 13% (270t-

[379] BC's carbon neutral legislation, which was introduced in 2007, requires all public sector organizations to measure, reduce and offset GHG emissions from buildings, vehicle fleet and paper use. According to BC MOE (2011), BC's public sector is now officially the first province or state to achieve carbon neutrality in North America.

[380] While time was a limiting factor in this respect, a deeper exploration of programme costs, both expected and actual (via Government freedom of information access), would be an interesting avenue for further research.

CO2e) for the Ministry of Economic Development.[381] For the Department of Conservation, this translates into a projected financial savings of NZ$4.3 million (DOC, 2007; Mason & Ball, 2008). While savings were anticipated by the Ministry of Economic Development and the other agencies (Table 3.10), given that estimated costs, including offsetting for the 2008-2012 period were NZ$10.4 million (NZ Govt., 2007b), it is not likely that savings from the lead-core agencies would exceed the initial programme expense. Moreover, as highlighted in Birchall et al. (2012), because the quick and easy ("low-hanging-fruit") emission reductions will have been made during the trial period, post-2012 reductions would be minimal.

It is worth repeating that while the NZ$10.4 million gross over three years included energy audits and travel plans for all 34 core agencies, it only included the offset portfolio for the 2006/07 to 2011/12 emissions from the six lead-agencies (NZ Govt., 2007b). Given that the lead-core six agencies, by weight, represented only 16% of the 159,000 t-CO2e for the total 34 core public service departments (NZ Govt., 2008), Government's post-2012 offset liability was potentially quite large, depending on departments' offset requirement. Exacerbating the problem further, the Department of Conservation had identified only 50,000 hectares of land suitable and available for offset needs (NZ Govt., 2007b). If offsetting requirements for the six lead-core agencies necessitated between 10,000 and 27,000 hectares, post-2012 needs most certainly would have exceeded the Department of Conservation's capabilities, thus requiring what would likely have proven a more expensive option.

However, these projections are only one side of a multi-faceted paradigm shift towards carbon mitigation. And while the National-led Government was adamant that the CNPS programme served only to cost Government money, the Labour-led Government believed that: "everything about having a carbon neutral public service made sense, it saved money; so it wasn't only good for the environment, it was good for the bottom line of the Government's budget" (Table 5.4, Clark).

[381] Given that the CNPS programme was intended to demonstrate leadership on carbon neutrality, a best case scenario offset threshold of 19% (for the Department of Conservation) seems a little weak, suggesting that perhaps the bar Government planned to set was one of "business-a-little-less-than-usual" (e.g. Ball et al 2009a) rather than a paradigm shift in climate mitigation.

Moreover, on a global scale, as expressed in Stern (2006), benefits of near-term action overwhelmingly outweigh the economic costs of inaction.[382] And as alluded to earlier in this chapter, the Labour-led Government understood the long-term nature of this investment and was correspondingly keen to demonstrate leadership in this area.

Ultimately, the CNPS programme was not promoted as a short-term cost saving exercise. Instead, Labour recognised that "without commitment to greater sustainability…, we risk not only damaging our environment, but also exposing our economy to significant risk" (Clark, 2007c). As discussed perviously, having economics as the central thread in a climate mitigation strategy, be it for carbon management or neutrality, tends to miss the significance of sustainable development[383] and the need to address associated environmental issues and their economic causes. This highlights another important consideration, the value of carbon offsetting, particularly in terms of the manage-mitigate threshold (e.g. Ball et al., 2009b), and certainly with regard to efficacy associated with carbon neutral strategies in general (e.g. Lohmann, 2006; Smith, 2007; Spreng et al. 2007; Hopwood, 2009; Milne & Grubnic, 2011).

Compared to the CNPS programme, Government's financial obligation for the CCP-NZ programme was relatively minor, with participant councils receiving funding to cover annual membership and NZ$4000 to cover the cost of the intern (who's role as noted previously was to assist with the completion of Milestone 1). Unlike the CNPS programme, the CCP-NZ programme was not a Government mandated carbon neutral programme and as a result Government was not responsible for council offset requirements.

While annual membership fees were not disclosed, if we liberally calculate the possible obligation for the period between 2004 and 2009 at the maximum rate of NZ$3000 per council per year, based on the revised fee structure, as discussed in Chapter 3, for 6 years and 34 councils, the total is NZ$612,000. Given that not all councils were members of the CCP-NZ programme 2004-2009 (some started earlier while others started later), and not all councils had a population greater than 100,000, this figure is a crude approximation. Additionally, since this is based on the revised fee structure, it may have been a greater sum

[382] As noted previously, ambitious emission reduction policies do not necessarily harm the economy (Chapman & Boston, 2007)

[383] It should also be noted that NZ does not in fact have a defined sustainable development strategy, despite the implied importance of sustainable development to the country's identity (e.g. Buhrs, 2008).

for the noted term. As for the cost of the intern for each council, at NZ$4000 per council, Government expended approximately $136,000 to assist with the completion of Milestone 1.[384] Total expenditure for the CCP-NZ programme is thus liberally estimated to be approximately NZ$748,000 for the period 2004-2009. Moving forward, using the revised fee structure, Government's obligation would have been approximately NZ$102,000 per year, plus an additional NZ$4000 for an intern and NZ$3000 per year for every additional council that joined the programme. Again, this is based on the highest possible membership fee category, and thus would likely be a lesser sum.

**Programmatic Inefficiencies**

With the expressed aim of the CNPS programme being global leadership and long-term economic resilience in a carbon constrained world, and the minimal cost associated with the CCP-NZ programme, economics does not scan as the primary driver for programme termination. Had the National-led Government rationalised the termination of these programmes by suggesting that they were inefficient at achieving their aim, they would have had a more compelling case. As demonstrated by the narratives from CS1 and CS2, both the CNPS and the CCP-NZ programmes suffered from a range of programmatic inefficiencies. And while programmatic inefficiencies were not cited by the senior managers as being the rationale for programme termination, it is clear, while admittedly speculative, that had the programmes continued (beyond 2009) without modification, these inefficiencies would have likely diminished the programmes' ability to achieve their respective goal.

Yet during the operation of the CNPS and the CCP-NZ programmes, results were realised. As the findings suggest, in addition to cost and emission reductions, organizations experienced an increase in senior management awareness with regard to operational carbon mitigation and importantly, broadened their network base for sharing of best practices in the area of energy management and sustainability.

Whether the Government was aware of the programmes' inefficiencies and successes when the decision to terminate was made, remains unclear. What is clear, however, is that a formal

[384] This figure, while noted in each Councils' Milestone 1 report, remains approximate as ICLEI could not disclose the actual sum. Also, because Hutt City Council had only made 'Political Declaration,' it is not clear whether council had begun the inventory; had council not begun the inventory, they likely would not have received the $4000 from the Ministry for the Environment, and thus Government would have expended approximately $132,000 instead of $136,000 to assist with the completion of Milestone 1.

evaluation into the effectiveness of the two programmes did not in fact occur prior to their termination, as is evident from the senior managers narratives (Fig. 7.9), and in the case of the CCP-NZ programme, confirmed by Local Government New Zealand (Table 5.5), and ICLEI B (Table 5.5) who adds that "Governments very rarely want to be told the truth." Had a formal evaluation occurred, the new National-led Government would have discovered that in spite of a plethora of pitfalls, both the CNPS and the CCP-NZ programmes had merit and were indeed achieving their goals.

Interestingly, National's failure to demonstrate, or even identify in this instance, the inefficiencies of the CNPS and the CCP-NZ programmes detracts from their assertion that the programmes were too expensive. As deLeon (1982a) explains, if Government suggests that a programme was terminated on the grounds of economics or efficiencies, it would imply that an evaluation would be imperative to the determination of this rationale; "how else can one arrive at program costs or benefits lacking skilled evaluations and the evidential base they provide?" (deLeon, 1982a, p. 22). If an informal assessment of the CNPS and the CCP-NZ programmes did occur, what criteria was used in the decision to terminate? What role did the targeted agency play, and how involved were the stakeholders? While this research cannot speak to the criteria used to assess the effectiveness of these programmes, the findings certainly demonstrate that the organizations and stakeholders involved in the CNPS and the CCP-NZ programmes played no role whatsoever in the formal determination of the respective initiatives' effectiveness.

**Political Ideology**

If, however, political ideology is the motivation for termination, an evaluation of programme effectiveness may be redundant. As explained by deLeon (1982a, p. 14): "Critical decisions are made on the basis of political expediency and beliefs... they are far removed from rigorous programme evaluation and analytic influence." With this in mind, along with the timing of programme termination relative to the shift in Government, and with the evidence from the research which demonstrates that 67% of CS1 and 63% of CS2 interviewees believed that programme termination was politically motivated (Fig. 7.1), it is convincingly clear that political ideology was the dominant rationale for the termination of the CNPS and the CCP-NZ programmes.

As Moloney (2010) contends, ideology plays a critical role in crafting meaning and identity, and determining political behaviour. Since its inception in 1916 (Aimer, 2010), when its goals were driven by the industrial labour movement, humanitarian issues and strong anti capitalist/ state controlled economic socialist ideology,[385] Labour has transformed into an "ideological coalition of liberals and socialists," a social democratic centre-left party known as the "third way." Combining traditional humanitarian concerns with free market reforms, contemporary Labour ideology rejects the notion that the economy should be "kept largely subordinate to government" (Giddens 1998, p. 99, in Aimer, 2010), while remaining committed to key social issues such as environmental sustainability and climate change mitigation.

It is here where Labour, centre-left, and National, centre right, diverge. National's economic policy reflects individual freedom, and private enterprise in the economy, a support base that is largely farmers, industrialists, merchants and the upper-middle classes (James, 2010). For Key's National-led Government, action on sustainability and climate change mitigation seems to be contingent on cost neutrality, or at the very least low cost/ low commitment (this will be discussed further towards the end of this chapter). Clark's Labour-led Government, on the other hand, understood that early investment in sustainability and climate change mitigation is not only economically prudent (e.g. Stern, 2006, 2008b), it is necessary for NZ to remain globally competitive in a carbon constrained economy.

While National continues to assert that "tackling climate change is the Government's number one environmental priority" (Smith, 2009b), it identifies that "it is unrealistic to continue to pretend we are, or can be, world leaders in reducing emissions" (Smith, 2009b). And to emphasise the lack of value in the CNPS programme, Smith (2009a) denounced it as "just a feel good slogan."

In Clark's (Table 5.4) view, "tackling climate change is not a major priority for the NZ Government now… they will put any growth ahead of the environment." And while Smith (2009b) acknowledges that "it was the policy of the previous Government for NZ to lead the world on climate change," in reference to the CNPS programme, Clark (Table 5.4) reiterates

[385] Labour never really fulfilled this objective though, as it alienated voters (e.g. Miller, 2010).

that "[National's] canning it would have absolutely nothing to do with whether it was succeeding or not. Canning it would be simply pure politics." This sentiment was echoed by Local Government New Zealand (Table 5.5) and reinforced by ICLEI A (Table 5.5) who indicated that:

> Anything that was to do with sustainability – that word – anything that had the word 'sustainability' attached to it seemed to rouse the ire of some politicians… There was a political ideology which was about rejection of programmes of the past Government.

In the end, the findings suggested that while the National-led Government is not prepared to fund public sector climate control efforts, it does believe that the good cost-benefit initiatives should occur anyway, without costly programmes such as CNPS and CCP-NZ. Ministry for the Environment A (Table 5.4) explained, however, that this is not the case: "…I think that the key point behind that was that the Minister's (Smith) understanding that CNPS would happen anyway because it a good idea. That is not the case." Indeed, as will be discussed later in this chapter, the lead-core departments have ended their goal of carbon neutrality and scaled back efforts to manage carbon in general.

As for the actions associated with the CCP-NZ programme, as ICLEI A (Table 5.5) indicated:

> The big cry and the clear message [from Government] was… that now is the time for local government to take responsibility for [CCP-NZ] – in other words to pay for it; 'they should be doing it anyway and they should be paying for it.'

With the ideological shift towards strong neoliberal market environmentalism, Government support for initiatives like the CNPS and the CCP-NZ programmes has declined. The National-led Government's expectation is that public sector organizations should endeavour to explore climate mitigation on a cost analysis basis, without support from Government.[386]

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[386] Ultimately, the CCP-NZ programme was a capacity building initiative; once councils gained momentum, they really should be able to move forward on their own: "the interesting thing about a capacity building programme is that eventually you make yourself redundant... the whole point is that [councils] start to drive their own dynamic" (ICLEI B, Table 5.5).

It is unclear whether councils were aware that the Ministry for the Environment expected them to take on programme funding once the programme gained momentum within council: "That [CCP] was always set up on the basis that it would become self sustainable and that local authorities would buy into it to the point where [councils] would fund it. Now whether the councils were given that piece of information when they signed up or not is a different matter and I suspect they [were not]" (Local Government New Zealand, Table 5.5).

As indicated previously, Government's desire to demonstrate leadership on climate mitigation ended when National took office.

### 8.4.2. Obstacles to Programme Termination

As discussed in Chapter 4, deLeon posits six obstacles to programme termination. While deLeon's obstacles are usually explored when a programme continues to persist beyond its purpose or value, it is nonetheless instructive to consider the presence of the obstacles when a programme has been dismantled. For example, did deLeon's obstacles exist, and if so in what capacity? While the obstacles were obviously insufficient to hinder programme termination, were they in fact a barrier, if only a temporary one?

#### Intellectual Reluctance

DeLeon's first obstacle concerns intellectual reluctance, where those involved avoid the truth of their error - Government's tend not to like admitting that they made a mistake in promoting (and funding) an ineffective or poorly conceived programme (e.g Daniels, 1995). Notwithstanding the inefficiencies associated with these programmes, had the CNPS and the CCP-NZ programmes been dismantled by a succeeding Labour led-Government, then perhaps this barrier would have been sufficient to block termination. However, in the case of a shift in Government party leadership, intellectual reluctance is not a barrier, but instead can be used by the new Government to demonstrate the previous Government's failings.

Furthermore, in the case of the CNPS and the CCP-NZ programmes, following their termination the National-led Government diverted attention towards its new climate change agenda, namely the re-conceived emissions trading scheme. As Bardach (1976) indicated, programme A must be terminated in order for programme B to flourish. While Labour embraced both global leadership on carbon neutrality and an all-sector (and all-emission) emissions trading scheme, because of National's resistance to Labour initiatives, particularly those that placed short-term costs on Government, it abandoned the CNPS and the CCP-NZ programmes full-stop. As a result of its international obligation to the Kyoto Protocol,

Government was not in a position to terminate the emissions trading scheme, so instead National revised the scheme's approach and delayed sector compliance.[387]

**Institutional Permanence**

DeLeon's second obstacle, institutional permanence, speaks to the notion that programmes are designed to endure political shifts, with those that are obscure or old, and well entrenched being particularly good at avoiding termination. Though early scholarship on termination theory argues that public sector programmes (and or organizations) are virtually immortal (e.g. Kaufman, 1976), more recent research suggests otherwise (e.g. Lewis, 2002). And while it has been demonstrated that a programme's age is positively correlated to its chance of survival, Sato (2002) explains that when termination does occur, it occurs with either a bang or a whimper. In the case of the CNPS and the CCP-NZ programmes, given the paradigm shift in political ideology following the 2008 election, the programmes' relative newness, and having been the flagship initiative of the previous Prime Minister, termination was swift.

**Dynamic Conservatism**

As for deLeon's third obstacle, dynamic conservatism, it is believed that if a programme is able to evolve its *reason d'être*, it can avoid termination. The ending of the CNPS and the CCP-NZ programmes was swift, and though National suggested that the good cost-benefit initiative should carry on, without Government support efforts were significantly scaled back. As will be discussed in Chapter 9, instead of outright termination, National could have evolved the programmes into Government mandated and supported carbon management strategies.[388] This would remove the offset requirement and allow Government to benefit from the investment already incurred.

**Anti-termination Coalitions**

Anti-termination coalitions are cited as deLeon's fourth obstacle to programme termination. As discussed in Chapter 4, organised groups or networks, typically those with a vested

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[387] Interestingly, while NZ asserts that it will stand by its existing Kyoto Protocol commitment, it will not sign on to the second commitment period. Instead, along with countries like the United States, Canada, Japan, China, India, Brazil and Russia, NZ will make a non-binding pledge under the UN Convention Framework to commence January 2013. NZ has not as yet set a formal target for the 2013-2020 period (NZ Govt., 2012b).

[388] Had this occurred, political ideology would not likely have been the dominant rationale for programme termination, as judged by CS1 and CS2 interviewees.

Perhaps as an alternative to carbon neutrality, the National-led Government could have adopted a measure-manage approach, with the option of achieving CEMARS (Certified Emissions Measurement And Reduction Scheme) certification. In this vein, organizations would measure and manage their GHG emissions, with third party verification leading to certification. See CaroNZero for further details:http://www.carbonzero.co.nz/cemars/.

interest in the programme's continuation, will take action to resist termination (e.g Frantz, 1992). As the research demonstrated, though organizations participating in the CNPS and the CCP-NZ programmes were well networked, organised resistance to termination did not exist. In fact, in the case of the CNPS programme, while five of the six lead-core agencies believed that the Ministry for the Environment was working to oppose programme termination, Ministry for the Environment A (Table 5.4) indicated: "it is not our job as officials to fight… when there is a new government, they quickly move – [the ministry] change gear to align themselves with the new government. It is their job to support the government." In the end, as Adam et al. (2007)'s typology suggests (Table 4.1), when low stickiness (lack of resistance) is correlated with high political incentive (shift in government), programme termination is more often than not the outcome.

**Legal Barriers and High Start-up Costs**

DeLeon's final two obstacles to programme termination relate to legal barriers and high start-up costs. In terms of the former, while legal discussions were beyond the scope of this research, neither the former Prime Minister of NZ nor the CEO of ICLEI, mentioned any legal ramifications associated with the termination of their respective programme. As for high start-up costs, because the new National-led Government was not interested in proceeding with Labour's ambition to lead the world on carbon neutrality, believing that Labour's efforts were costly to Government, termination of Labour's programmes was seen as a cost saving exercise instead of costing Government further. The lack of an evaluation of the programmes' effectiveness is further evidence that the National-led Government was not interested in assessing the value of the programmes, financial or otherwise. National's ideological desire to distance itself from Labour initiatives thus further supports the notion that regardless of funds spent, sunk costs were not a barrier to programme termination.

## 8.5. OUTCOME AND MOVING FORWARD

### 8.5.1. Programme Success

To judge the success of the CNPS and the CCP-NZ programmes it is important to consider the programmes' failings and accomplishments in equal measure. And moreover, to remain cognisant of the fact that the programmes were dismantled before they were able to achieve

their stated goal, carbon neutrality and quantifiable emission reductions, respectively. As the programmes' failings have already been discussed, this section will address accomplishments.

In line with the Labour-led Government's desire to be at the forefront of the global effort on climate change mitigation, the aim of the CNPS programme was to elevate NZ's international profile as a leader on climate change and carbon neutrality (NZ Govt., 2007b). While the new National-led Government dismantled the programme before the lead-core agencies were able to achieve carbon neutrality, the programme was indeed demonstrating leadership. Though it is difficult to determine the programme's influence on an international scale, domestically, the CNPS programme was in fact demonstrating leadership:

> Feedback from private sector suggests now that Government is no longer involved in CNPS programme, those "corporates and businesses that were inclined to go down this path are not now doing so because Government is not doing it" (Table 5.4, Ministry for the Environment A).

In addition to leadership, and in spite of Nick Smith's assertion that the "only achievement" of the CNPS programme was "…to cost this country millions of dollars" (Smith, 2009a), the 34 core departments identified over 300 actions to lower GHG emissions below business as usual (NZ Govt., 2008), with further reductions expected once departments completed their energy audits and travel plans. And, in the process of developing their emissions inventory and management plan, senior management awareness and learning around organizational carbon management, and climate mitigation in general, increased substantially (Fig. 7.7). Participation in the programme also significantly increased inter-ministry/ department networking, which fostered further awareness raising and helped to maintain the programme's ethos beyond its operation (albeit to a lesser extent than during programme operation).

In a similar vein, council participation in the CCP-NZ programme increased both senior management awareness around organizational carbon management and broadened inter-council networking and collaboration on GHG emission reduction related objectives (Fig. 7.7). By the time the CCP-NZ programme ended, these actions ultimately resulted in total quantifiable emission reductions, stemming from participant activities from councils' base-

year through to June 30, 2009, in excess of 400,000 t-CO2e, or about 133,300 t-CO2e/y (CCP-NZ, 2009). Admittedly, ICLEI notes that "there remains significant potential for more emissions reductions from the local government sector;" with total quantifiable council emissions hovering around 22,000,000 t-CO2e/y, a reduction in the order of 133,333 t-CO2e/y (or 0.6%) does not seem satisfactory (e.g. CCP-NZ, 2009, p. 10).[389]

Although many councils involved in the programme considered their experience a success (Fig. 7.8), ICLEI B was less certain. Strictly speaking, while the programme's goal was to help local government councils quantify their GHG emissions, it was also to build off M1 and achieve quantifiable GHG emission reductions. Despite quantifiable reductions in excess of 400,000 t-CO2e (CCP-NZ, 2009), ICLEI B (Table 5.5) conceded that it was too soon to know whether real emissions reductions were actually made: "Was it a success? My key success criteria would be did it reduce CO2 emissions and I am yet to see that evidence. [CCP-NZ] perhaps was not there long enough to do that or to be able to account for it." While it may have been too early to see significant emission reductions, evidence from CS2 S2 demonstrates that the majority of councils believed that reductions did occur (Fig. 7.6). As for the co-benefits of participation in the programme, ICLEI B (Table 5.5) does acknowledge their value, but maintains that without actual reductions in CO2, "I can't see how you can claim [the programme] as a success."

In the end, whether the programmes were a success is less important, given their untimely termination, than what can be learned from the experience and improved on in the future. Though next steps will be discussed later in this chapter, for the purposes of this section, it is worthwhile repeating that a formal evaluation into the effectiveness of the CNPS and the CCP-NZ programmes did not occur. As a result, it may be difficult to learn from the

[389] Because ICLEI aggregates corporate and community emissions when it presents emission reductions in CCP-NZ (2009), it is difficult to gauge the impact of councils' in-house (corporate) reduction efforts. While greater detail may be gleaned from individual council emission reports, since not all councils joined the programme at the same time, progressed through the 5 milestone framework at the same rate, or provided complete data, and since not all councils are included in this study, it is difficult to effectively assess the data on this scale. Accepting this limitation, and to better assess the value of initiatives like the CCP-NZ programme, in the future, it would be interesting to explore each participant councils' emissions and emissions reductions in isolation. As for the 16 councils included in this study, from individual base-year through individual forecast-year, total corporate emissions increased by about 9.3% overall, 86,339 t-CO2e to 94,451 t-CO2e (Table 3.18) (note that his does not include Auckland Regional Council, Kapiti Coast District Council or Dunedin City Council), and total community emissions increased by about 15% overall, 16,589,592 t-CO2e to 19,093,482 t-CO2e (Table 3.20) (note that his does not include Auckland Regional Council, Greater Wellington Regional Council, Hawkes Bay Regional Council, Kapiti Coast District Council or Dunedin City Council). As noted in Chapter 3, councils typically attribute GHG emission increases to population growth.

experience and improve the next iteration of the programmes. But that may be beside the point since leadership on climate mitigation remains a partisan concern in NZ.[390]

### 8.5.2. Embeddedness of Programme Values

Another possible indicator of programme success, while not a strictly quantitative measure, relates to whether the programmes' ethos endured programme termination; was the programmes' momentum sufficient to embed its values into the organization's business as usual? In terms of lead-core CNPS programme participants, without a direct mandate from central government, carbon neutrality is no longer a target which would therefore suggest that the ethos of the programme did not become embedded in organizational management. With that said, however, some organizations indicated that they will continue to manage and effort to reduce their carbon, albeit at a scaled back pace, with the caveat of cost neutrality, and in some instances, with the absence of a formal reduction target.

For the Inland Revenue Department, on the other hand, the programme's values have not endured, as is evident by the department's complete reversal on carbon mitigation activities. This is perhaps not a surprise given that the Inland Revenue Department's GHG emissions represent 35% of the total lead-core organizations for the base year (Fig. 3.15). What is more, a significant proportion of Inland Revenue Department's emissions are derived from energy (Fig. 3.20), which is a function of the national grid's energy mix, and thus beyond the department's control. And while the department did identify a 10% energy reduction per FTE target as part of its CNPS programme reduction plan, the majority of its reduction targets were focused on transport (Table 3.10).

The experience within the CCP-NZ programme councils is similar, with council carbon management activities likewise continuing in a scaled-back manner.[391] Having that said, the data suggested that the majority of councils that discussed the programme's momentum indicated that the momentum has carried forward, with three councils identifying that the momentum has in fact grown: "I think the momentum is there and I think it's built even

[390] This point reinforces the notion that the CNPS and the CCP-NZ programmes were terminated for reasons of political ideology, instead of merit or lack there of.

[391] 15 of the 16 SC2 S1 councils indicated that they were planning to continue, to some degree, the emission reductions efforts begun during their participation in the CCP-NZ programme.

further…We've become more inspirational"(Table 5.5, Auckland Regional Council B). What's more, the consensus among CS2 S1 councils is that the programme's values have become embedded within organizational management (Fig. 7.8). And while this is particularly the case with respect to energy management and sustainable development, as Christchurch City Council (Table 5.5) explained, it is also exemplified by council's belief in exercising a precautionary approach to future climate change affects in general:

> So the council's policy talks about acknowledging that climate changes are happening. It's adopted a precautionary approach to future works and planning. When the council's developing new projects it takes account of the effects of climate change.

In spite of councils' beliefs, ICLEI A (Table 5.5) suggested that councils have lost the programme's momentum. Local Government New Zealand (Table 5.5), however, indicated otherwise, explaining that "councils are still looking for something, and they still come back asking for you know, 'what are we going to do now we don't have CCP?'"

Interestingly, evidence from CS2 S2 word count analysis does not directly corroborate the data resulting from interviews with the senior managers. For example, while the use of the words 'climate change' and 'carbon,' respectively, in council Annual Reports did increase to five of seven councils for 2009 - 2010 (Fig. 6.1), 'carbon management' continued to remain absent from councils' first year of programme membership through 2009 - 2010. Reference to 'Communities for Climate Protection - New Zealand' (or 'CCP-NZ') similarly was not present in the latter years of programme membership.[392] Additionally, zero councils made reference to 'carbon management' in their LTCCP 2009 - 2019 or Annual Plan 2010 - 2011 (Fig. 6.2). If the values of the CCP-NZ programme had become embedded within councils' organizational management structure, would words such as 'carbon management' and reference to CCP-NZ, perhaps in a transitionary fashion, be mentioned in council Annual Reports and Plans?

Perhaps not. Review of council Annual Reports, Annual Plans and LTCCPs occurred approximately one year after SC2 S1 interviews, and just before SC2 S2 interviews. And, it

[392] Yet 'Communities for Climate Protection - New Zealand' (or 'CCP-NZ') was present in 71% of council LTCCP 2009-2019 (Fig. 6.2).

was interviewees from the SC2 S1 interviews that indicated programme values had in fact become embedded within council's organizational management. As noted in Chapter 5, many senior managers responsible for the delivery of the CCP-NZ programme were disestablished shortly following the programme's termination. While this limited the study sample for SC2 S1, the trend continued for SC2 S2, with many senior managers that were present for SC2 S1 interviews becoming disestablished before SC2 S2 interviews could occur. Ultimately, within the CCP-NZ programme councils, and specifically within SC2 councils, in many councils senior managers associated with carbon mitigation had become redundant. This observation is further supported by ICLEI B (Table 5.4), who suggested that within NZ in general, as a result of huge staff turnover, there is no corporate memory within Government agencies. As for the CCP-NZ programme specifically, ICLEI B (Table 5.5) explained that:

> Government programmes won't learn anything from what we did – won't learn anything. They'll just sail on in blissfully unaware, probably because anyone you talk to now has no knowledge of what we did anyway and certainly no knowledge of the underpinning values to it.

Because of significant organizational disestablishment, both within the CNPS and the CCP-NZ programme agencies, it is difficult to accept that the ethos of these two programmes has carried forward within the respective agencies.[393]

### 8.5.3. NZ's Path Forward on Carbon Mitigation

Before National was elected to lead Government, it identified the importance of confronting climate change[394] as part of its economic growth strategy: "National is committed to growing our economy. Confronting climate change will be a vital part of the policy mix for fueling that growth" (Key, 2007). In addition, National recognized the potential liability of inaction, particularly with respect to NZ's famous brand image:

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[393] Alternatively, the disestablishment of the senior managers, while in line with the termination of the CNPS and the CCP-NZ programmes, may have more to do with Government efforts to reduce the size of the public service in general. See for example SSC (2012) which indicates that public service staffing decreased from approximately 45,297 in 2008 to 43,595 in 2011, with manager and policy analyst positions decreasing by 85 and 800 FTE, respectively, between the same period. See also NZ Govt. (2012a) for public service FTE reduction projections for 2012.

A study into the actual rate of disestablishment among senior managers responsible for the delivery of the CNPS and the CCP-NZ programmes, within their respective agency, could further improve the validity of this statement.

Had Government allowed the programmes to run their course, organizations could have experienced significant learning around process (inventory building) and application (emissions reductions). Instead, as the data have demonstrated, memory loss will most certainly occur.

[394] National recognized the importance of climate change, and advocated the need to act decisively: "The biggest environmental challenge of our time: global climate change…The National Party will ensure that New Zealand acts decisively to confront this challenge" (Key 2007, p. 4).

> In the decades ahead, peoples' perceptions around climate change will affect the brand image of New Zealand and its exports. New Zealand must take credible steps to reduce greenhouse gas emissions or risk becoming a trading pariah (Key, 2007).

While brand image is important for trade, it is critical for NZ's tourism identity which is largely centered on the idea that NZ is 'clean and green' and '100% Pure' (e.g. MFE, 2009a).[395] But in a recent interview with the BBC, Prime Minter Key provided a lackluster defence of NZ's clean and green image (Murray, 2011). For Pearce (2009), NZ's branding rings hollow when viewed through its Kyoto commitment as well,[396] particularly given the 23% rise in net emissions since 1990 (NZ Govt., 2009b).[397] Whether in response to the declining validity of its green branding, or as Tourism NZ (2011) claims, to "highlight the many individual experiences on offer," NZ has shifted the '100% Pure' branding to '100% Pure You' (see also Caims, 2011).[398] And while National maintains that "the question is no longer whether New Zealand should act on climate change – the question is how we best act..." (Key, 2007). Also, NZ remains the only country among the OECD countries that does not require by law independent state of the environment reports. Though the Minister for the Environment concedes the need to change this oversight (Smith, 2011b), it does beg the question, how 'clean and green' is NZ?[399]

Moreover, while Smith (2009b) affirms that "dealing with climate change effects must be part of existing planning for Government...", and that "it is now business as usual," public sector organizations continue to identify a lack of Government support and leadership for climate mitigation. What's more, a study conducted by NZ's Office of the Auditor-General demonstrates that emissions quantification is in fact not business as usual for at least 53% of the 77 local authorities covered by their study[400] (OAG, 2011). This trend is common on global scale as well, with the literature suggesting that while public sector decision-makers

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[395] As noted previously, many tourist destinations are adopting an environmental ethos and branding themselves as carbon neutral (e.g. Gossling & Schumacher, 2010). According to True & Gao (2010, p. 43), NZ's brand, on an annual basis, is worth "NZ$530 million to the tourism sector and NZ$938 million to the economy as a whole."

[396] Given that NZ recently downgraded its Kyoto commitment to a non-binding target for the second commitment period, 2013 to 2020 (NZ Govt., 2012b), perhaps Pearce (2009)'s sentiment is accurate.

[397] See also Milne et al. (2010) and Milne & Grubnic (2011) for a discussion on NZ's Kyoto liability.

[398] Pearce (2009) notes that NZ tourism could decrease by 68% if its 'clean and green' image were to prove false.

[399] Incidentally, the National-led Government recently scrapped the five-yearly State of the Environment Report, a decision the public was made aware of by the Green Party, not National directly. While Government claims the five-yearly report will be replaced by interim regular report cards, critics argue that essential indicators have been removed from the report: http://www.nzherald.co.nz/health/news/article.cfm?c_id=204&objectid=10843742.

[400] As OAG (2011) identified, while these authorities are not currently measuring their GHG emissions, they do not have plans to measure in future either.

are indeed beginning to engage the climate change discourse, priority for action remains low (e.g. Brody et al., 2010); and in the absence of supportive policy from Government, it remains difficult for public organizations to make significant contributions to climate change mitigation (e.g. Betsill, 2001).

As for Labour's ambition to lead the world on carbon neutrality, highlighting the gap between Labour's "lofty goal" and NZ's track record in this area, Smith (2009b) identifies that this too could in effect harm NZ's international reputation. Smith (2009b) goes on to suggest that NZ should instead undertake effort to do its fair share, adding that..:

> The climate change policy the Government inherited was not credible. We have to give New Zealand's climate change policy a reality check. We are not claiming New Zealand can be a world leader in emissions cuts or the first carbon-neutral country in the world.

Given the CNPS programme participants heavy reliance on offsets to achieve carbon neutrality, it does seem fair to question the integrity of the programme's ethos for sustainability. But with that said, the programme was charting new territory. Further, because the programme ended prematurely, it is difficult to project how organizational emission reduction efforts would have evolved beyond the first commitment period.

Ultimately, with the non-fossil fuel proportion of NZ's energy mix in consistent decline, and the doubling of coal-fired power generation on the horizon (e.g. Kelly, 2007),[401] Smith (2009b) acknowledges that "it is just unrealistic to continue to pretend we are, or can be, world leaders in reducing emissions." Yet Government's new energy strategy does aim to generate 90% of NZ's energy by renewable sources by 2025 (NZ Govt., 2011a). And while the literature suggests (e.g. Sohel et al., 2009; Packer, 2009; Penniall & Williamson, 2009; Sovacool, 2009; Mason et al., 2010) that national energy policies do tend to focus on the grid's mitigative potential via renewable sources of energy, the caveat in NZ is that supply must not be impeded (NZ Govt., 2011a). Moreover as highlighted in Birchall et al. (2012), while Labour's energy strategy emphasised sustainability as a key objective, National's

[401] NZ's new energy strategy highlights the tie between economic performance and social wellbeing and energy security, emphasizing the importance of fossil fuels (MED, 2011). Notwithstanding the new strategy's mandate for exploration, exploitation and utilization of fossil fuels, however, the strategy does acknowledge that environmental management is critical if NZ's economy is to reach its potential (MED, 2011).

strategy remains focused on exploration, exploitation and utilisation of fossil fuels, with economic growth as the core outcome.

In terms of a national emissions reduction target, Government has adopted the target of 50% reduction in CO2e, as compared to 1990 levels, by 2050, with a "responsibility target" of 10-20% emissions reduction below 1990 levels by 2020.[402] And though Government's new target may seem low from an international perspective,[403] its legitimacy is further hobbled by the fact that the target is contingent "upon an effective global agreement" (NZ Govt., 2011b), which in coming years may in fact prove elusive given the resistance of critical emitters such as China and the USA. Along this line, Government recently announced that instead of signing onto the second commitment period of the Kyoto Protocol, beginning 1 January 2013, NZ will make a voluntary pledge under the Convention Framework (NZ Govt., 2012b).[404] Though Government justified the decision by explaining that a pledge under the Convention Framework will align "its climate change efforts with developed and developing countries which collectively are responsible for 85% of global emissions" (NZ Govt., 2012b),[405] it nonetheless demonstrates National's lack of commitment to climate change mitigation. Again, this is not surprising, particularly when considered in the context of the uncertainty surrounding net estimates of NZ's liability under the Protocol's first commitment period, estimates which Milne et al. (2010) describe as a "seesaw" because of their variability.[406]

As for Government's revised emissions trading scheme, though promoted as "strik[ing] a better balance between NZ's environmental responsibilities and economic opportunities" (Key, 2010), is likewise an example of National's weak resolve for climate change mitigation. This is evident from Government's slowing of the next stage of the scheme, and the delayed entry of the agriculture sector, which was due for full obligation in

[402] See NZ Govt. (2009b) for specific details about NZ's 2020 commitment.

[403] The UK for example, through the UK Climate Change Act, has a legally binding target of 80% GHG emission reductions below 1990 by 2050 (DECC, 2012).

[404] Ironically, NZ's announcement to shift to a voluntary pledge took place on the same day that the Australian Government committed to the Protocol's second phase.

[405] The 85% includes, for example, the United States, Japan, China, India, Canada, Brazil and Russia.

[406] Milne & Grubnic (2011) explain that because NZ "seems set to pin its hopes on forestry offsets," the surplus/ liability (using the most optimistic and pessimistic estimates from forestry) amounts to a range of (+) NZ$851 million to (-) NZ$137, a NZ$1 billion variation.

2015 (Smith, 2011b).[407] On the other hand, as noted in Chapter 3, the inclusion of emissions from the agriculture sector in the NZ Emissions Trading Scheme may have been overly ambitious in the first place, given that NZ is among the first countries to include this measure (e.g. Raea, 2009), and particularly given that this sector is responsible for the greatest share of NZ's emissions. Ultimately, as the literature suggests (e.g. Clo, 2009; Lohmann & Sexton, 2010), because of over-allocation of allowances (typically to the biggest polluters), schemes such as NZ's emissions trading scheme tend to result in market saturation. This, in the end, renders such schemes economically and environmentally trivial and ineffective (e.g. Milne & Grubnic, 2011).

Perhaps then, National's laggard approach to emissions trading is a moot point. But since over the last two decades NZ's energy use per capita has been increasing[408] while in most of the developed world per capita energy use has been decreasing (Renowden, 2007), and notwithstanding the fact that because of NZ's unique emissions profile "reducing carbon pollution is more difficult [for NZ] than most developed countries" (Smith 2009b), NZ may have to reassess what it means by 'fair share' of the global burden.

In November 2012 Prime Minister Key publicly acknowledged that the previous Government "may have had a stronger emphasis" on climate change,[409] and reiterated that "we never wanted to be a world leader in climate change we've always wanted to be what is affectionately called a fast follower."[410] And while Government concedes that the environment does matter, "[Government] wants to make sure that [it is] not prioritising that over everything else," with Key assuring that he believes "[Government has] got that balance about right."[411] As for NZ's withdrawal from the second phase of the Kyoto Protocol, Green Party MP Kennedy Graham describes the decision as "NZ wilfully turn[ing] its back on the rest of the world... we have turned our back on our moral and political obligations" (Graham,

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[407] A recent (October 2012) article published by ONE News criticizes amendments to the scheme, particularly the "two-for-one" deal which essentially requires high emitters to pay for only half their total emissions, emphasizing the concern that Government's goal with the scheme is not climate change mitigation but economic growth. The article quotes Labour MP David Cunliffe: "We have the bizarre and frankly disgusting picture of a Government so craven to its traditional agricultural and big business backers that it's selling out the future of my children and your children and because they are confused about science that puts a 95 per cent-plus confidence on this change:" http://tvnz.co.nz/politics-news/bill-halting-ets-expansion-sparks-heated-debate-5163588.

[408] This is further exacerbated by the energy sector's transportation related emissions, which increased by 66% between 1990 and 2009 (NZ Govt., 2011c).

[409] See 3 News, 12 November 2012: http://www.3news.co.nz/Key-defends-no-to-Kyoto-Protocol/tabid/1607/articleID/276309/Default.aspx.

[410] See ONE News, 12 November 2012: http://tvnz.co.nz/politics-news/john-key-defends-kyoto-decision-5209727.

[411] See 3 News, 12 November 2012: http://www.3news.co.nz/Key-defends-no-to-Kyoto-Protocol/tabid/1607/articleID/276309/Default.aspx.

2012). Ultimately, in placing national economic growth over its international commitment to mitigate climate change, the National-led has further demonstrated its ideological shift away from the previous Government's desire to lead by example in this important area.

## 8.6. SUMMARY AND LOCATING THE RESEARCH

### 8.6.1. Summary of Discussion Chapter

The CNPS and the CCP-NZ programmes grew out of the Labour-led Government's desire to make sustainability a cornerstone of NZ's national identity. This came at a time when sustainability and climate change were featuring prominently on international agendas, and Labour wanted to be bold in this area. In particular, Labour wanted to be at the forefront of the global effort on carbon neutrality (Clark, 2007cc). In 2008 the NZ government changed from a Labour to a National Government, and this resulted in a shift in Government's carbon neutrality strategy, including the termination of the CNPS and the CCP-NZ programmes.

Under the National-led Government, NZ is no longer aiming to lead on climate change. Not surprisingly, the findings suggest a strong political element associated with programme termination, yet it is evident that programmatic inefficiencies were rampant. Nevertheless, narratives from public sector senior managers involved in the CNPS and the CCP-NZ programmes suggested that the initiatives delivered both emission reductions and cost savings, as well as significant learning around climate change and carbon management, and fostered a broadened network circle.

In the end, given the new Government's lack of leadership on carbon management and neutrality, notwithstanding the desire of some organizations to continue with programme objectives, NZ organisational resolve towards these goals has weakened.

### 8.6.2. Locating the Research

As has been demonstrated throughout this study, there is a dearth of empirical academic work that examines how public sector organizations make sense of the climate change discourse, and how they determine strategies to manage their carbon and achieve carbon neutrality (e.g. Ball et al. 2009b; Brody et al., 2010; Milne & Grubnic, 2011).

The processes of conception, outworking and termination of the CNPS and the CCP-NZ programmes provided an opportunity to study the beliefs, values, commitments and narratives at play in NZ organizations which were seeking to act on climate change. Additionally, the ending of these initiatives provides an excellent opportunity to understand how the new NZ government values the need to manage carbon, providing insight into public sector organizational resolve towards carbon management, and Government's new direction on domestic and international climate change policy in general.

Through critical investigation of NZ government public sector organizations' cognitions, commitments and actions for carbon mitigation (in some instances carbon neutrality), and the application of policy theory (termination theory), this study endeavours to narrow the gap in the literature and contribute to the scholarly discussion on climate change.

# CHAPTER 9 - CONCLUSIONS

## 9.1. INTRODUCTION

### 9.1.1. Introduction to Chapter 9

The CNPS and the CCP-NZ programmes grew out of the Labour-led Government's desire to make sustainability a pillar of NZ's national identity. This came at a time when sustainability and climate change were featuring prominently on international agendas, and Labour wanted to be a force in this area.

While National openly recognised climate change as the greatest environmental challenge of our time (before and after winning the 2008 election), and advocated the need to incorporate climate policy into economic growth plans, it did not support Labour's ambition for leadership on carbon mitigation. Arguing that actions associated with the CNPS and the CCP-NZ programmes should occur without costly initiatives, the newly elected National-led Government quickly dismantled the CNPS programme and halted funding, ultimately ending the CCP-NZ programme.

### 9.1.2. Chapter Purpose and Outline

Building on the analytical discussion of the previous chapter, the aim of Chapter 9 is to provide a succinct assessment of the research findings as they relate to the study's objectives, and then to discuss the implications of these findings in the broader context of theory and practice. Additionally, while avenues for future research have been identified throughout the thesis, this chapter provides a short summary of interesting themes for further exploration.

Chapter 9 is divided into five sections, (9.1) Introduction; (9.2) Primary Research Findings; (9.3) Implications of Research Findings; (9.4) Future Research Directions; and, (9.5) Conclusion. Section 9.1 provides an introduction to the chapter. Sections 9.2 and 9.3 explore the study's research findings, first as the findings relate to the study's two objectives, and then in the context of the findings' theoretical and practical implications. Section 9.4 proposes several themes for future research. And, section 9.5, the chapters' final section, provides an ultimate conclusion to the chapter and the thesis.

## 9.2. PRIMARY RESEARCH FINDINGS

### 9.2.1. Research Objective 1

> *Determine why NZ's newly elected National-led Government cancelled the Carbon Neutral Public Service programme and halted funding, therefore ending the Communities for Climate Protection programme.*

Using deLeon's model for programme termination to explore the dismantling of the CNPS and the CCP-NZ programmes, this study finds that though economic constraints and programmatic inefficiencies may have played a role, political ideology was the primary rationale for programme termination.

NZ's newly elected National-led Government indicated that the CNPS and the CCP-NZ programmes were terminated for reasons of conventional neoliberal economic ideology; despite the sunk costs, immediate termination of the programmes was considered a sound method to stem further expense. Unfortunately, due to limited access to financial information, it was not possible to critically assess the cost/benefit relationship of the programmes beyond insights gained from the participants.

As for programmatic inefficiencies, the narratives indicated that programmatic challenges were endemic. The initiatives nevertheless enjoyed some success, with senior managers from both programmes indicating that emission reductions and cost savings were experienced, along with several non-financial benefits such as increased awareness around climate change and carbon mitigation, and improved network circles.

Ultimately, given the preponderance of evidence from the data, the CNPS and the CCP-NZ programmes were both dismantled for reasons of political ideology. Sustainability and the desire to demonstrate leadership on carbon mitigation was a cornerstone of Clark's Labour-led Government. Key's National-led Government expressed a need to get beyond unrealistic aspirations and to give NZ's climate agenda a reality check, citing the gap between Labour's ambition to lead the world on carbon neutrality and NZ's increasing contribution to global GHG emissions as justification for the shift in policy.

### 9.2.2. Research Objective 2

> *Determine whether despite the discontinuation of these two programmes, NZ government organizations will continue to strive for carbon emission reductions and carbon neutrality.*

With the ideological shift towards strong neoliberal market environmentalism, Government support for initiatives like the CNPS and the CCP-NZ programmes has declined. And though the National-led Government does believe that the good cost benefit initiatives associated with these programmes should continue, central Government emphasises that the actions should occur without requiring Government assistance.

The data demonstrate, however, a clear need for Government leadership and support in this area. Since the termination of the CNPS programme efforts to achieve carbon neutrality have ceased, with resolve towards carbon management in decline. The experience within the CCP-NZ programme organizations is similar, with plans for carbon neutrality recast as aspirational and carbon management as non-target orientated-measures, but not necessarily emission reduction-driven.

Overall, notwithstanding the desire of some organizations to continue with programme objectives, NZ public sector organisational resolve towards these goals has weakened. On the national level, Government's new climate change policy focuses on a revised emissions trading scheme and a national emission reduction target of 50% reduction in CO2e, as compared to 1990 levels, by 2050, including an aspiration to achieve 90% of NZ's energy by renewable sources by 2025 (NZ Govt., 2011a). However, with its recent announcement to move away from the Kyoto Protocol's second commitment, Government is unclear how national emission targets will evolve in the near-term (NZ Govt., 2012b).

## 9.3. IMPLICATIONS OF RESEARCH FINDINGS

### 9.3.1. Theoretical Implications of Findings

Programme termination has remained an understudied field since its first application by Biller in 1976 (Graddy & Ye, 2008), yet it remains a potentially important component of the public policy process (e.g. deLeon, 1997). This research contributes to policy theory literature by applying deLeon's rationales for programme termination to the ending of the CNPS and

the CCP-NZ programmes. The theoretical implications of the study's findings support the notion that "what one party views as frivolous expense or unforgivable error, another party views as indispensable..." (Lewis, 2002, p. 91).

This research demonstrates that the application of deLeon's rationales for programme termination is appropriate for the contemporary field of public sector organizational carbon mitigation. DeLeon's approach has proven sufficiently robust to tease out the nuances of vested interest (programme architects) and experience (senior managers).

Though deLeon's theory for programme termination is useful on its own, the inclusion of deLeon's obstacles to programme termination provides more depth to the analysis and can help in the final development of a conclusion.

While other theories were considered for this research, termination theory was ultimately selected because it allows for an exploration of the evolution of the CNPS and the CCP-NZ programmes, from inception through termination. Given the dual objectives of the research, and the subjects involved in the case studies, deLeon's theory for programme termination has proven the correct choice in theoretical framework for this study.

With that said, expanding deLeon's rationales for programme termination, to include programme value, for example, could increase the model's level of complexity and render the analysis more rigorous. Likewise, the inclusion of subcategories could tease-out some of the nuances that make a specific rationale for termination more obvious and/ or appropriate.

### 9.3.2. Practical Implications of Findings

Climate change presents society with an unprecedented challenge, which is made more difficult by the wicked nature of the challenge and sheer complexity of policy solutions. While governments from around the world have recently instituted public sector carbon management initiatives designed to mitigate against climate change, NZ has terminated two programmes intended to help NZ public sector organizations reduce their carbon liability. Through empirical case-based narratives, this research goes beyond existing academic

research to provide a critical analysis of how the NZ Government perceives, rationalizes and acts on climate change and carbon mitigation.

The practical implication of these findings surround the notion that if a programme is aligned with Labour's ethos, the National-led Government will likely terminate the programme regardless of the potential value for climate mitigation. This idea is supported by the findings which indicated that Government did not perform a formal evaluation of the effectiveness of either the CNPS or the CCP-NZ programmes, yet deemed both to be economically unsound: for example, in order to deem a programme economically unsound or inefficient, some method of evaluation to determine such would be necessary, whereas, if political ideology is the motivation for termination, an evaluation of the programme's effectiveness may be redundant.

The findings also shed light on the decision dynamics of senior managers faced with balancing near-term economic with long-term environmental challenges while operating within a diminished budget and increasing responsibility. A further implication of these findings concerns NZ government organizations' resolve for carbon emission reductions and carbon neutrality. This study demonstrates that while a strong business case can be made for reducing organizational carbon emissions, NZ government organizations do indeed require Government financial support in order to pursue such actions. Or, given that the CNPS or the CCP-NZ programmes were the impetus for organizational action on climate change, Government support is needed at least to cultivate interest in such initiatives, whether through a mandated or voluntary effort.

From a technical perspective, given that ICLEI is in the process of scoping an EU expansion of its CCP initiative, findings from this study may serve an instructional function. Specifically, demonstration of lessons learned from the CCP-NZ programme experience may assuage local government buy-in and thus facilitate programme uptake throughout the EU.[412]

[412] While ISO compliance was not a requirement for the CCP and the CCP-NZ programmes, perhaps the EU's iteration of the programme would gain credibility if indeed it was compliant. Moreover, the CCP-NZ experience can shed light on the appropriateness of ICLEI's 5 milestone framework: is it applicable in different countries, or even within the same country but in different regions? If the framework is too malleable, does it lose comparative, quantitative and functional value?

## 9.4. FUTURE RESEARCH DIRECTIONS

Through the course of this PhD study many further interesting questions have become evident, some of which are not quite central to the objectives of the research. While a selection of these questions are addressed in the footnotes throughout the text, others will remain the fodder for future research. The following section identifies a selection of themes for future inquiry.

### Adaptation versus Mitigation

An interesting area for future research concerns the prevalence of adaptation versus mitigation in local government planning and policy. While local authorities have traditionally focused their environmental change policy on adaptive capacity (i.e. watershed management, coastal erosion, and infrastructure), central governments are beginning to shift responsibility for climate change mitigation onto local authorities (i.e. carbon management and emission reductions) (Greenaway & Carswell, 2009). This presents an opportunity to explore the decision dynamics local authorities face when confronted with competing priorities whilst operating within a limited budget.

### Carbon Mitigation Strategies

Another area for further research concerns whether the rhetoric surrounding carbon management strategies matches realised emission reductions. While Busch (2010) and others have explored this dynamic in the private sector, there remains a dearth of attention to public sector organizations. This study does go some way to address this gap, yet the efficacy of carbon accounting, particularly with regard to public sector carbon neutral strategies, remains an area in need of further academic attention (e.g. Hopwood, 2009; Milne & Grubnic, 2011).

Building off this study, the gap in the literature could be further narrowed through research into the completeness, consistency and accuracy of the inventories developed for the CNPS programme participant organizations. Given that interviewees identified data availability as a key methodological frustration, this could provide an assessment of the programme's efficacy beyond the narratives.

**Carbon Offset - Manage - Mitigate Threshold**

As identified by Ball et al. (2009b), and reiterated in this study, an important area for further research is the manage-mitigate threshold associated with public sector organizational carbon offsetting. In this sense, what are the drivers that determine when it is beneficial to offset as opposed to reducing emissions further, and what criteria is employed for this decision? In the case of the CNPS programme, the offset threshold for the two most ambitious departments was 13% for the Ministry of Economic Development and 19% for the Department of Conservation. Why are these two thresholds so low? What does this imply about Government's initial intention for leadership? Was the Labour-led Government seeking to demonstrate "business-a-little-less-than-usual" (e.g. Ball et al 2009a), or a paradigm shift in climate mitigation?

**Influence on the Private Sector**

This study identified that private sector interest in organizational carbon neutrality deteriorated when the CNPS programme collapsed. Thus an interesting area for future research relates to private sector involvement with organizations participating in the CNPS programme. Specifically, what was the nature of the relationship, were the private sector organizations also seeking to achieve carbon neutrality? If, as the narratives imply, private sector organizations ended their pursuit of carbon neutrality when the CNPS programme ended, what does this imply about private sector organizational resolve for carbon mitigation?

**The CNPS Programme's Adherence to the GHG Protocol's Principles**

Organizations involved in the CNPS programme prepared and developed their emissions inventory report in accordance with ISO 14064-1, with verification provided by Det Norske Veritas. Each of the 34 inventories achieved a positive assurance: "A positive assurance report has been given over the assertions and quantifications included in this report" (MFEd, 2008). The GHG Protocol has five key principles: (1) Relevance; (2) Completeness; (3) Consistency; (4) Accuracy; and, (5) Transparency. Given the plethora of programmatic difficulties, it would be interesting to explore how closely the organizations adhered to the principles of the Protocol, and by extension, what variables or criteria were employed by Det Norske Veritas' to determine assurance.

**Strength of ICLEI's CCP Programme**

While this study has identified weaknesses in the NZ arm of ICLEI's CCP initiative, were these weaknesses endemic to NZ or are they present within the CCP programme in general? ICLEI is in the process of expanding its emission reduction framework into Europe.[413] An analysis of the CCP parent programme's design and methodology could be instructional and shed light on the potential drawbacks of the programme and its ability to disseminate beyond Australia.

## 9.5. CONCLUSION

While economics and inefficiencies are cited openly as motivating programme termination, in practice political ideology tends to be responsible for the majority of government terminations (e.g. Cameron, 1978; deLeon, 1982a, 1987; Frantz, 2002; Lewis, 2002; Adam et al. 2007). Though this is true in this research as well, elements of all three of deLeon's rationales for programme termination were present in the dismantling of the CNPS and the CCP-NZ programmes.

Both programmes demonstrated emission reductions and cost savings prior to termination. And, while non-financial benefits of the programmes remain to be fully assessed, participants identified a number of co-benefits associated with participation in the programmes. Ultimately, some government organizations will continue to include climate change and carbon mitigation in their management strategies (albeit to a lesser degree than during programme operation), others however, have pulled back completely. This suggests that without a direct mandate and financial support from Government, some government organizations will not incorporate climate change thinking into business as usual.

As an alternative to programme termination, by allowing the CNPS and the CCP-NZ programmes to formally evolve into Government-mandated (and financially supported) carbon management strategies, Government could have redefined its carbon agenda without significant corporate memory loss and nullified the need for offsetting (and particularly the high degree of reliance upon it). In this respect, transition to carbon management would have allowed Government to better capitalise on costs already incurred, the investment in learning

[413] It would also be useful to consider the effectiveness of the Partners for Climate Protection (PCP) programme, the Canadian arm of the CCP programme.

around carbon accounting, and the leadership demonstrated both nationally and internationally. Importantly, this approach would have demonstrated to NZ that the National-led Government is openminded, resourceful and able to recognise the value of programmes that were intended to improve NZ government organizations' carbon footprint, not simply serve partisan ideology.[414]

If Government were to introduce another iteration of either the CNPS or CCP-NZ programmes, in addition to focusing on carbon management rather than carbon neutrality, the initiative would have to be bipartisan in order to survive subsequent political shifts. In order to achieve universal support the programme must demonstrate that energy and financial savings will be achieved, as well as reductions in GHG emissions.

To improve the efficiency and effectiveness of programme delivery and application, the scheme would have to enjoy executive support within the prescribed agencies. This can be achieved by including executive and senior management in the scoping and execution phases of programme development. Programme efficiency and effectiveness can also be improved by ensuring adequate time for internal capacity-building around climate change discourse and the practical component of carbon accounting and management. And, in terms of design, the programme should include benchmarks that facilitate comparison within the NZ public sector as well as internationally; milestones that allow progression to be measured should also be included. Administratively, the programme should be run by EECA, given the organization's mandate for energy conservation and energy efficiency. Since it is not realistic to expect all government agencies to create a specific management position for climate change or sustainability, each agency should nominate a representative (perhaps under an energy manager) who will work closely with the lead agency.

From a financial perspective, the programme should initially be funded by central Government (i.e. for audits associated with emission inventory development). Moving forward, Government should provide seed funding for the internal programme representative,

[414] Data resulting from the semi-structured interviews suggested that the new National-led government is not interested in supporting public organization carbon management or carbon neutral initiatives. However, as alluded to previously, it was indicated that good cost-benefit initiatives should occur without a costly Government-run programme (e.g. Table 5.4, Ministry for the Environment A). Given National's current climate change agenda (namely a weakened emissions trading scheme), it is not likely that Government will further explore public agency carbon mitigation.

or for the creation of a management position, depending on the size of the agency. To make clear Government's expectations, central Government must be transparent and forthcoming with regard to the programme's funding structure.

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# APPENDIX - TABLES

Table 3.1: List of CNPS programme participants and their associated abbreviations

| Department | Abbreviation |
|---|---|
| Archives New Zealand | Archives |
| Department of Corrections | Corrections |
| Crown Law Office | Crown Law |
| New Zealand Customs Service | Customs |
| Department of Building and Housing | DBH |
| Department of Conservation | DOC |
| Department of Internal Affairs | DOIA |
| Department of Labour | DOL |
| Department of the Prime Minister and Cabinet | DPMC |
| Education Review Office | ERO |
| Government Communications Security Bureau | GCSB |
| Inland Revenue Department | IRD |
| Land Information New Zealand | LINZ |
| Ministry of Agriculture and Forestry | MAF |
| Ministry for Culture and Heritage | MCH |
| Ministry of Economic Development | MED |
| Ministry of Foreign Affairs and Trade | MFAT |
| Ministry for the Environment | MFE |
| Ministry of Fisheries | MFISH |
| Ministry of Defence | MOD |
| Ministry of Education | MOE |
| Ministry of Health | MOH |
| Ministry of Justice | MOJ |
| Ministry of Research, Science, and Technology | MORST |
| Ministry of Transport | MOT |
| Ministry of Pacific Island Affairs | MPIA |
| Ministry of Social Development | MSD |
| Ministry of Women's Affairs | MWA |
| National Library of New Zealand | NLNZ |
| New Zealand Food Safety Authority | NZFSA |
| State Services Commission | SSC |
| Statistics New Zealand | STATSNZ |
| Te Puni Kokiri | TPK |
| Treasury, The | Treasury |

Lead-core departments (6)

Table 3.2: List of CCP-NZ programme participants and their associated abbreviations

| Local Government | | Abbreviation | Year Joined CCP-NZ* | Milestone Reached* |
|---|---|---|---|---|
| Regional Council | Auckland | ARC | 2006 | 4 |
| | Environment Canterbury | ECRC | 2004 | 2 |
| | Environment Waikato | EWRC | 2007 | 1 |
| | Greater Wellington | GWRC | 2007 | 1 |
| | Hawkes Bay | HBRC | 2007 | 1 |
| | Taranaki | TRC | 2004 | 2 |
| District Council | Carterton | CDC | 2004 | 3 |
| | Far North | FNDC | 2007 | 1 |
| | Franklin | FDC | 2007 | 3 |
| | Kaikoura | KDC | 2004 | 3 |
| | Kaipara | KaiDC | 2007 | 1 |
| | Kapiti Coast | KCDC | 2004 | 3 |
| | Masterton | MDC | 2004 | 3 |
| | New Plymouth | NPDC | 2007 | 2 |
| | Papakura | PDC | 2006 | 1 |
| | Rodney | RodDC | 2004 | 1 |
| | Rotorua | RDC | 2005 | 3 |
| | Southland | SDC | 2005 | 3 |
| | South Waikato | SWDC | 2004 | 3 |
| | South Wairarapa | SWaiDC | 2005 | 3 |
| | Waipa | WDC | 2007 | 1 |
| | Western Bay of Plenty | WBPDC | 2008 | 1 |
| City Council | Auckland | ACC | 2005 | 1 |
| | Christchurch | CCC | 2004 | 5 |
| | Dunedin | DCC | 2006 | 1 |
| | Hamilton | HCC | 2004 | 4 |
| | Hutt | HuttCC | 2008 | Political Declaration |
| | Manukau | MCC | 2006 | 1 |
| | Nelson | NCC | 2007 | 3 |
| | North Shore | NSCC | 2005 | 1 |
| | Palmerston North | PNCC | 2008 | 1 |
| | Porirua | PCC | 2007 | 1 |
| | Waitakere | WaiCC | 2004 | 4 |
| | Wellington | WCC | 2004 | 5 |

* Data sourced from Communities for Climate Protection – New Zealand 2 Actions Profile 2009

Study Selection (16 councils)

Table 3.3: New Zealand's total (gross) emissions by gas in 1990 to 2009

| Direct greenhouse gas emissions | Gg $CO_2$ equivalent 1990 | 2009 | Change from 1990 (Gg $CO_2$ equivalent) | Change from 1990 (%) |
|---|---|---|---|---|
| $CO_2$ | 25,000.2 | 33,444.6 | +8444.4 | +33.8 |
| $CH_4$ | 25,303.5 | 26,136.2 | +832.7 | +3.3 |
| $N_2O$ | 8,163.4 | 10,037.9 | +1,874.5 | +23.0 |
| HFCs | NO | 879.2 | +879.2 | NA |
| PFCs | 629.9 | 46.1 | –583.7 | –92.7 |
| $SF_6$ | 15.2 | 19.8 | +4.5 | +29.9 |
| **Total** | **59,112.1** | **70,563.8** | **+11,451.7** | **+19.4** |

Source: NZ Govt. (2011c). Note: CO2, CH4 and N2O values exclude emissions and removals from LULUCF. The % change for hydrofluorocarbons is not applicable (NA) as production of hydrofluorocarbons in 1990 was not occurring (NO). Columns may not total due to rounding.

Table 3.4: New Zealand's emissions and removals by sector in 1990 to 2009

| Sector | Gg $CO_2$ equivalent 1990 | Gg $CO_2$ equivalent 2009 | Change from 1990 (Gg $CO_2$ equivalent) | Change from 1990 (%) |
|---|---|---|---|---|
| Energy | 23,359.2 | 31,361.4 | +8,002.2 | +34.3 |
| Industrial processes | 3,382.6 | 4,345.5 | +963.0 | +28.5 |
| Solvent and other product use | 41.5 | 27.9 | –13.6 | –32.8 |
| Agriculture | 30,277.5 | 32,810.5 | +2,533.0 | +8.4 |
| Waste | 2,051.3 | 2,018.4 | –32.9 | –1.6 |
| **Total (excluding LULUCF)** | **59,112.1** | **70,563.8** | **+11,451.7** | **+19.4** |
| LULUCF | –23,451.1 | –26,682.7 | –3,231.7 | –13.8 |
| **Net Total (including LULUCF)** | **35,661.0** | **43,881.1** | **+8,220.0** | **+23.1** |

Source: NZ Govt. (2011c). Note: LULUCF includes CO2 removals and emissions of CO2, CH4 and N2O. Net removals from the LULUCF sector are as reported under the Climate Change Convention. Columns may not total due to rounding.

Table 3.5: CNPS core department emissions profile for base-year July 1, 2006 to June 30, 2007

| Department* | GHG emissions weights for base-year July 1, 2006 - June 30, 2007 (t-CO2e/y)** | GHG emissions weights by scope (t-CO2e/y)** | | | GHG emissions by source (%)*** | | | FTE** | GHG emissions per FTE (t-CO2e/y)** |
|---|---|---|---|---|---|---|---|---|---|
| | | Scope 1 | Scope 2 | Scope 3 | Energy | Transport | Waste | | |
| **Archives** | 1041.40525 | 402.77793 | 507.3598218 | 131.2675 | 90.5 | 7.5 | 2 | 109.5 | 9.51055021 |
| **Corrections^^^** | 51903 | 37980 | 8246 | 5677 | 44 | 12 | 3 | 6541 | 7.93502523 |
| **Crown Law** | 491.85403 | 0 | 188.01117 | 303.84286 | 56 | 38 | 6 | 172.6 | 2.84967572 |
| **Customs** | 3851.63377 | 666.29637 | 524.7078033 | 2660.62959118 | 24 | 75 | 1 | 1178 | 3.26963817 |
| **DBH** | 666.41 | 53.28 | 179.61 | 433.52 | 30 | 68 | 2 | 383 | 1.73997389 |
| **DOC** | 9511.24 | 4303.1 | 1004.27 | 4203.87 | 14 | 85 | 1 | 1700 | 5.59484706 |
| **DOIA** | 2832.7 | 768.24 | 897.67 | 1166.79 | 38 | 61 | 1 | 1300 | 2.179 |
| **DOL^^** | 6329.16 | 639.26 | 1996.78 | 3693.12 | 34 | 65 | 1 | 1926 | 3.28616822 |
| **DPMC** | 439.868223 | 158.31291 | 145.6500687 | 135.90524329 | 71 | 27 | 2 | 125 | 3.51894578 |
| **ERO** | 791.54 | 236.21 | 133.27 | 422.06 | 25 | 73 | 2 | 280 | 2.82692857 |
| **GCSB^^** | 1407.71319 | 114.75838 | 495.0979887 | 797.85681422 | 51 | 48 | 1 | 307 | 4.58538497 |
| **IRD** | 9405.06 | 793.25 | 4676.44 | 3935.37 | 65 | 33 | 2 | 5552 | 1.69399496 |
| **LINZ** | 2073.48248 | 18.422053 | 418.2604299 | 1636.8 | 37 | 62 | 1 | 540 | 3.83978238 |
| **MAF** | 2857.32 | 677.94 | 968.9 | 1210.48 | 38 | 60 | 2 | 1139 | 2.5086216 |
| **MCH** | 206.939146 | 0 | 102.162115 | 104.7770311 | 54 | 44.5 | 1.5 | 89 | 2.32515894 |
| **MED** | 2037.63 | 132.09 | 106.95 | 1798.59 | 39 | 60 | 1 | 723 | 2.81829876 |
| **MFAT^^** | 2258 | 6.14 | 0 | 2251.86 | 10 | 88.5 | 1.5 | 712 | 3.17134831 |
| **MFE** | 912.29 | 4.96 | 147.54 | 759.79 | 18 | 81 | 1 | 280 | 3.25817857 |
| **MFISH** | 3922 | 491 | 415 | 3,016 | 7 | 92 | 1 | 445 | 8.81348315 |
| **MOD^** | 288.58699 | 0 | 58.71699 | 229.870 | 30 | 67 | 3 | 60 | 4.80978317 |
| **MOE** | 6544.82294 | 1575.2136 | 1058.3634801 | 3911.2458157 | 32 | 66 | 2 | 2547 | 2.56962031 |
| **MOH** | 4017.73 | 42.26 | 367.68 | 3607.79 | 39 | 59 | 2 | 1778 | 2.25969066 |
| **MOJ** | 9732.7 | 732.4 | 4914.9 | 4085.4 | 64 | 32 | 4 | 2849 | 3.41618112 |
| **MORST** | 208.341734 | 0 | 41.1272517 | 167.2144818 | 19 | 80 | 1 | 71 | 2.93439061 |
| **MOT** | 292.363214 | 0 | 83.9385948 | 208.4246187 | 32 | 67 | 1 | 175 | 1.67064693 |
| **MPIA** | 261.760889 | 72.562575 | 36.35286512 | 152.8454484 | 29 | 70 | 1 | 44 | 5.949111109 |
| **MSD** | 20308.6837 | 5338.8053 | 9233.5784 | 5736.30 | 59 | 39 | 2 | 9308 | 2.18185257 |
| **MWA** | 76.7743112 | 0 | 15.1541043 | 61.620206901 | 22 | 75 | 3 | 35.5 | 2.16265665 |
| **NLNZ^** | 1933.5941 | 667.00488 | 916.8436974 | 349.7455303 | 84 | 16 | 0 | 401 | 4.82193043 |
| **NZFSA** | 1660.23 | 350.61 | 184.49 | 1125.13 | 12 | 87 | 1 | 450 | 3.6894 |
| **SSC** | 541.401399 | 3.1998828 | 163.8955304 | 374.30598587 | 47 | 51 | 2 | 216 | 2.50648796 |
| **STATSNZ** | 2071.63037 | 145.65151 | 679.2199482 | 1246.758905 | 43 | 56 | 1 | 1000 | 2.07163037 |
| **TPK** | 1446.67428 | 668.67255 | 343.0293864 | 434.97233951 | 26 | 73 | 1 | 232 | 6.23566499 |
| **Treasury** | 847.1428 | 0 | 171.8470 | 675.2958 | 51 | 48 | 1 | 294 | 2.8814381 |
| **TOTAL** | **153171.683** | **57042.418** | **39422.816646** | **56706.448172** | | | | **42963** | **3.56523308** |

This table was constructed using data from New Zealand Ministry Emission Inventory Reports and Reduction Plans. * See Appendix for list of Ministry/ Department abbreviations. ** Source: Respective Ministry/ Department Emission Inventory Report (2008). *** Source: Respective Ministry/ Department Reduction Plan (2008); Data for GCSB, NLNZ and NZFSA was extrapolated from the respective Ministry's Emission Inventory Report. ^ According to MOD, Scope 1 emission data is not available; according to NLNZ, data for waste is not available. ^^ Offshore building information is not included in this data-set, likewise offshore FTE are not included in this data-set. DOL has an additional 224 staff employed as locally engaged staff offshore; GCSB has an additional 12 staff stationed overseas; MFAT has an additional 611 staff stationed overseas. ^^^ Corrections, in addition to Energy, Transport, and Waste has a fourth category for GHG emissions by source (%), Livestock, which accounts for 41%.

Table 3.6: CNPS core department emission weights by scope for base-year July 1, 2006 to June 30, 2007

| Department* | GHG emissions weights for base-year July 1, 2006 - June 30, 2007 (t-CO2e/y)** | GHG emissions weights by scope (t-CO2e/y)** | | | | | |
|---|---|---|---|---|---|---|---|
| | | Scope 1 | | Scope 2 | | Scope 3 | |
| | | Weights (t-CO2e/y) | % | Weights (t-CO2e/y) | % | Weights (t-CO2e/y) | % |
| **Archives** | 1141.4052478 | 402.777926 | 38.676387 | 507.359822 | 48.718769 | 131.2675 | 12.6048433381 |
| **Corrections^^^** | 52003 | 37980 | 73.174961 | 8246 | 15.887328 | 5677 | 10.9377107296 |
| **Crown Law** | 591.85403 | 0 | 0 | 188.01117 | 38.224993 | 303.84286 | 61.7750067027 |
| **Customs** | 3951.633768253 | 666.296374 | 17.299058 | 524.707803 | 13.622993 | 2660.629591 | 69.0779485088 |
| **DBH** | 766.41 | 53.28 | 7.9950781 | 179.61 | 26.951876 | 433.52 | 65.0530454225 |
| **DOC** | 9611.24 | 4303.1 | 45.242261 | 1004.27 | 10.55877 | 4203.87 | 44.198968799 |
| **DOIA** | 2932.7 | 768.24 | 27.120415 | 897.67 | 31.689554 | 1166.79 | 41.1900307127 |
| **DOL^^** | 6429.16 | 639.26 | 10.100234 | 1996.78 | 31.548894 | 3693.12 | 58.3508712057 |
| **DPMC** | 539.86822299 | 158.312911 | 35.990986 | 145.650069 | 33.112205 | 135.9052433 | 30.8968086774 |
| **ERO** | 891.54 | 236.21 | 29.841827 | 133.27 | 16.836799 | 422.06 | 53.321373525 |
| **GCSB^^** | 1507.71318582 | 114.758383 | 8.1521139 | 495.097989 | 35.170374 | 797.8568142 | 56.6775123127 |
| **IRD** | 9505.06 | 793.25 | 8.4342896 | 4676.44 | 49.722596 | 3935.37 | 41.8431142385 |
| **LINZ** | 2173.48248257 | 18.4220527 | 0.8884595 | 418.26043 | 20.171882 | 1636.8 | 78.9396589438 |
| **MAF** | 2957.32 | 677.94 | 23.726429 | 968.9 | 33.909398 | 1210.48 | 42.3641734212 |
| **MCH** | 306.9391461 | 0 | 0 | 102.162115 | 49.368192 | 104.7770311 | 50.6318079854 |
| **MED** | 2137.63 | 132.09 | 6.4825312 | 106.95 | 5.2487449 | 1798.59 | 88.2687239587 |
| **MFAT^^** | 2358 | 6.14 | 0.2719221 | 0 | 0 | 2251.86 | 99.7280779451 |
| **MFE** | 1012.29 | 4.96 | 0.5436868 | 147.54 | 16.172489 | 759.79 | 83.2838242226 |
| **MFISH** | 4022 | 491 | 12.519123 | 415 | 10.581336 | 3,016 | 76.8995410505 |
| **MOD^** | 388.58699 | 0 | 0 | 58.71699 | 20.346375 | 229.870 | 79.6536254112 |
| **MOE** | 6644.8229368 | 1575.21364 | 24.068086 | 1058.36348 | 16.171002 | 3911.245816 | 59.7609110815 |
| **MOH** | 4117.73 | 42.26 | 1.0518377 | 367.68 | 9.1514363 | 3607.79 | 89.796726012 |
| **MOJ** | 9832.7 | 732.4 | 7.5251472 | 4914.9 | 50.498834 | 4085.4 | 41.9760189875 |
| **MORST** | 308.3417335 | 0 | 0 | 41.1272517 | 19.740285 | 167.2144818 | 80.2597151281 |
| **MOT** | 392.3632135 | 0 | 0 | 83.9385948 | 28.710382 | 208.4246187 | 71.2896182132 |
| **MPIA** | 361.76088881 | 72.5625753 | 27.720939 | 36.3528651 | 13.887814 | 152.8454484 | 58.3912474835 |
| **MSD** | 20408.6837 | 5338.8053 | 26.288288 | 9233.5784 | 45.466159 | 5736.30 | 28.2455529109 |
| **MWA** | 176.774311201 | 0 | 0 | 15.1541043 | 19.738509 | 61.6202069 | 80.261491034 |
| **NLNZ^** | 2033.5941043 | 667.004877 | 34.495599 | 916.843697 | 47.416554 | 349.7455303 | 18.0878463335 |
| **NZFSA** | 1760.23 | 350.61 | 21.118158 | 184.49 | 11.112316 | 1125.13 | 67.7695259091 |
| **SSC** | 641.40139907 | 3.1998828 | 0.591037 | 163.89553 | 30.272462 | 374.3059859 | 69.1365014041 |
| **STATSNZ** | 2171.630368164 | 145.651515 | 7.0307675 | 679.219948 | 32.786734 | 1246.758905 | 60.1824980054 |
| **TPK** | 1546.674278071 | 668.672552 | 46.221362 | 343.029386 | 23.711584 | 434.9723395 | 30.0670542155 |
| **Treasury** | 947.1428 | 0 | 0 | 171.8470 | 20.285482 | 675.2958 | 79.7145180246 |
| **TOTAL** | **156571.68280695** | **57042.418** | **37.240838** | **39422.8166** | **25.737666** | **56706.44817** | **37.0214958358** |

This table was constructed using data from New Zealand Ministry Emission Inventory Reports and Reduction Plans. * See Appendix for list of Ministry/ Department abbreviations. ** Source: Respective Ministry/ Department Emission Inventory Report (2008). *** Source: Respective Ministry/ Department Reduction Plan (2008); Data for GCSB, NLNZ and NZFSA was extrapolated from the respective Ministry's Emission Inventory Report. ^ According to MOD, Scope 1 emission data is not available; according to NLNZ, data for waste is not available. ^^ Offshore building information is not included in this data-set, likewise offshore FTE are not included in this data-set. DOL has an additional 224 staff employed as locally engaged staff offshore; GCSB has an additional 12 staff stationed overseas; MFAT has an additional 611 staff stationed overseas. ^^^ Corrections, in addition to Energy, Transport, and Waste has a fourth category for GHG emissions by source (%), Livestock, which accounts for 41%.

Table 3.7: CNPS lead-core department emissions profile for base-year July 1, 2006 to June 30, 2007

| Department* | GHG emissions weights for base-year July 1, 2006 - June 30, 2007 (t-CO2e/y)** | GHG emissions weights by scope (t-CO2e/y)** | | | GHG emissions by source (%)*** | | | FTE** | GHG emissions per FTE (t-CO2e/y) ** |
|---|---|---|---|---|---|---|---|---|---|
| | | Scope 1 | Scope 2 | Scope 3 | Energy | Transport | Waste | | |
| **DOC** | 9511.24 | 4303.1 | 1004.27 | 4203.87 | 14 | 85 | 1 | 1700 | 5.59484706 |
| **IRD** | 9405.06 | 793.25 | 4676.44 | 3935.37 | 65 | 33 | 2 | 5552 | 1.69399496 |
| **MED** | 2037.63 | 132.09 | 106.95 | 1798.59 | 39 | 60 | 1 | 723 | 2.81829876 |
| **MFE** | 912.29 | 4.96 | 147.54 | 759.79 | 18 | 81 | 1 | 280 | 3.25817857 |
| **MOH** | 4017.73 | 42.26 | 367.68 | 3607.79 | 39 | 59 | 2 | 1778 | 2.25969066 |
| **Treasury** | 847.1428 | 0 | 171.8470 | 675.2958 | 51 | 48 | 1 | 294 | 2.8814381 |
| **TOTAL** | **26731.0928** | **5275.66** | **6474.727** | **14980.706** | | | | **10327** | **2.58846643** |

This table was constructed using data from New Zealand Ministry Emission Inventory Reports and Reduction Plans. * See Appendix for list of Ministry/ Department abbreviations. ** Source: Respective Ministry/ Department Emission Inventory Report (2008). *** Source: Respective Ministry/ Department Reduction Plan (2008)

Table 3.8: CNPS lead-core department emission weights by scope for base-year July 1, 2006 to June 30, 2007

| Department* | GHG emissions weights for base-year July 1, 2006 - June 30, 2007 (t-CO2e/y)** | GHG emission weights by scope (t-CO2e/y)** | | | | | |
|---|---|---|---|---|---|---|---|
| | | Scope 1 | | Scope 2 | | Scope 3 | |
| | | Weights (t-CO2e/y) | % | Weights (t-CO2e/y) | % | Weights (t-CO2e/y) | % |
| **DOC** | 9567.0410312 | 4303.1 | 45.24226 | 1004.27 | 10.5587705 | 4203.87 | 44.1989688 |
| **IRD** | 9463.2168858 | 793.25 | 8.43429 | 4676.44 | 49.7225961 | 3935.37 | 41.84311424 |
| **MED** | 2049.361276 | 132.09 | 6.482531 | 106.95 | 5.24874487 | 1798.59 | 88.26872396 |
| **MFE** | 929.00617578 | 4.96 | 0.543687 | 147.54 | 16.172489 | 759.79 | 83.28382422 |
| **MOH** | 4027.933274 | 42.26 | 1.051838 | 367.68 | 9.15143626 | 3607.79 | 89.79672601 |
| **Treasury** | 867.42828198 | 0 | 0 | 171.8470 | 20.285482 | 675.2958 | 79.71451802 |
| **TOTAL** | **26903.986925** | **5275.66** | **19.73604** | **6474.727** | **24.2217071** | **14980.7058** | **56.0422498** |

This table was constructed using data from New Zealand Ministry Emission Inventory Reports and Reduction Plans. * See Appendix for list of Ministry/ Department abbreviations. ** Source: Respective Ministry/ Department Emission Inventory Report (2008). *** Source: Respective Ministry/ Department Reduction Plan (2008)

Table 3.9: CNPS lead-core department Scope 3 emission inclusion for base-year July 1, 2006 to June 30, 2007

| Scope 3 Emissions Type | | Department* | | | | | |
|---|---|---|---|---|---|---|---|
| | | DOC | IRD | MED | MFE | MOH | Treasury |
| **Energy**** | Transmission and distribution line loss for all purchased electricity | 94.6 | 502.60 | 59.80 | 13.90 | 125.36 | 26.4518 |
| | Energy consumed by outsource providers | | 658.30 | | | | |
| | All purchased electricity for lighting, utilities/ appliance power in leased space in buildings where joint tenant | | | 413.36 | | 962.89 | 108.9183 |
| | All base electricity supplied by the landlord for common area lighting, lifts and air conditioning in buildings where is a joint tenant | | | 114.41 | | | |
| | Natural gas for base heating in owned and/ or leased buildings where joint tenant | | | 106.76 | | 126.49 | 129.1420 |
| **Sub-total** | | **94.6** | **1160.9** | **694.33** | **13.9** | **1214.74** | **264.5121** |
| **Transport**** | Air travel | 1129 | 2451.86 | 1,036.15 | 719.53 | 2184.23 | 396.3792 |
| | Helicopter use | 2806 | | | | | |
| | Business travel in rental car/ taxis | 138.72 | 171.05 | 51.84 | 22.86 | 143.64 | 11.3447 |
| **Sub-total** | | **4073.72** | **2622.91** | **1,087.99** | **742.39** | **2327.87** | **407.7239** |
| **Waste**** | Waste to landfill | 35.55 | 151.55 | 16.27 | 3.15 | 65.18 | 3.0598 |
| **Sub-total** | | **35.55** | **151.55** | **16.27** | **3.15** | **65.18** | **3.0598** |
| **Total Scope 3 Emissions (t-CO2e)** | | **4203.87** | **3935.36** | **1798.59** | **759.44** | **3607.79** | **675.2958** |

This table was constructed using data from New Zealand Ministry Emission Inventory Reports and Reduction Plans. * See Appendix for list of Ministry/ Department abbreviations. ** Source: Respective Ministry/ Department Emission Inventory Report (2008)

Table 3.11: CCP-NZ programme membership by date joined

| Year Joined | Regional Council | District Council | City Council | TOTAL |
|---|---|---|---|---|
| 2004 | 2 | 6 | 4 | **12** |
| 2005 | | 3 | 2 | **5** |
| 2006 | 1 | 1 | 2 | **4** |
| 2007 | 3 | 5 | 2 | **10** |
| 2008 | | 1 | 2 | **3** |
| **TOTAL** | **6** | **16** | **12** | **34** |

Data was extrapolated from Communities for Climate Protection – New Zealand Actions Profile 2009

Table 3.12: CCP-NZ programme participation as a proportion of milestone completion (by 2009)

| Council | Milestone 1 | Milestone 2 | Milestone 3 | Milestone 4 | Milestone 5 | Political Declaration | TOTAL |
|---|---|---|---|---|---|---|---|
| Regional | 3 | 2 | 0 | 1 | 0 | 0 | **6** |
| District | 6 | 1 | 9 | 0 | 0 | 0 | **16** |
| City | 6 | 0 | 1 | 2 | 2 | 1 | **12** |
| **TOTAL** | **15** | **3** | **10** | **3** | **2** | **1** | **34** |

Data was extrapolated from Communities for Climate Protection – New Zealand Actions Profile 2009

Table 3.13: CCP-NZ programme corporate base-year emissions by sector

| Sector | % | GHG Emissions (t-CO2e/y) |
|---|---|---|
| Buildings | 42 | 61423.74 |
| Streetlights | 18 | 26324.46 |
| Vehicle Fleet | 13 | 19012.11 |
| Water/ Sewage | 27 | 39486.69 |
| **TOTAL** | | **146247** |

Data was extrapolated from Table 2 & Graph 3, Communities for Climate Protection – New Zealand Actions Profile 2009

Table 3.14: CCP-NZ programme corporate base-year emissions by energy source

| Source | % | GHG Emissions (t-CO2e/y) |
|---|---|---|
| Electricity | 65 | 95060.55 |
| Natural Gas | 12 | 17549.64 |
| Diesel | 9 | 13162.23 |
| Petrol | 9 | 13162.23 |
| Coal | 3 | 4387.41 |
| LPG | 2 | 2924.94 |
| **TOTAL** | | **146247** |

Data was extrapolated from Table 2, Communities for Climate Protection – New Zealand Actions Profile 2009

Table 3.15: CCP-NZ programme community base-year emissions by sector

| Sector | % | GHG Emissions (t-CO2e/y) |
|---|---|---|
| Residential | 11 | 2404600.99 |
| Commercial | 9 | 1967400.81 |
| Industrial | 33 | 7213802.97 |
| Transport | 47 | 10274204.23 |
| **TOTAL** | | **21860009** |

Data was extrapolated from Table 3 & Graph 5, Communities for Climate Protection – New Zealand Actions Profile 2009. NOTE: This data excludes waste and agriculture.

Table 3.16: CCP-NZ programme community base-year emissions by energy source

| Source | % | GHG Emissions (t-CO2e/y) |
|---|---|---|
| Electricity | 26 | 4,890,066 |
| Natural Gas | 11 | 2,144,802 |
| Diesel | 17 | 3,980,320 |
| Petrol | 29 | 6,427,811 |
| Coal | 10 | 3,082,857 |
| LPG | 2 | 347,798 |
| Light Fuel Oil | 4 | 882,938 |
| Other | 1 | 103,417 |
| **TOTAL** | **100** | **21,860,009** |

Data was extrapolated from Table 3, Communities for Climate Protection – New Zealand Actions Profile 2009

Table 3.17: CCP-NZ programme study selection corporate emissions profile

| Local Government | | Corporate emissions profile** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Year Joined CCP-NZ* | Milestone Reached* | Base -year | Total Emissions (t-CO2e/y) | GHG emissions by Sector (t-CO2e/y)** | | | | | |
| | | | | | | Buildings | Streetlights | Vehicle Fleet | Employee Commute | Water/ Sewage | Waste |
| Regional Council | Auckland^ | 2006 | 4 | | 0 | | | | | | |
| | Environment Canterbury | 2004 | 2 (corporate) | 2001 | 1227 | 220 | | 624 | 346 | | 37 |
| | Greater Wellington*^ | 2007 | 1 | 2005 | 6,361 | 384 | | 929 | 247 | 4,761 | 40 |
| | Hawkes Bay | 2007 | 1 | 2006 | 886 | 140 | | 609 | | 137 | |
| District Council | Far North | 2007 | 1 | 2006 | 1960 | 216 | 337 | 449 | | 958 | |
| | Kaikoura | 2004 | 3 | 2001 | 99 | 12 | 34 | 13 | | 36 | 4 |
| | Kapiti Coast^^ | 2004 | 3 | | 0 | | | | | | |
| | Rotorua | 2005 | 3 (corporate) | 2001 | 4462 | 989 | 20 | 1039 | | 2414 | |
| | Southland | 2005 | 3 (corporate) | 2005 | 2924 | 1428 | 77 | 626 | | 793 | |
| City Council | Auckland | 2005 | 1 | 2004 | 10,444 | 6,039 | 3,164 | 751 | 490 | | |
| | Christchurch | 2004 | 5 | 2001 | 30069 | 10524 | 9021 | 902 | 601 | 9021 | |
| | Dunedin^^ | 2006 | 1 | | 0 | | | | | | |
| | Hamilton^^^ | 2004 | 4 | 2001 | 8194 | 2110 | 1563 | 895 | | 2504 | 1122 |
| | Nelson | 2007 | 3 | 2004 | 1077 | 338 | 368 | 135 | | 236 | |
| | Waitakere | 2004 | 4 | 2002 | 6059 | 1679 | 958 | 650 | 568 | 2204 | |
| | Wellington | 2004 | 5 | 2003 | 12,577 | 7,323 | 1,464 | 3,127 | | 663 | |
| **TOTAL** | | | | | **86,339** | **31402** | **17006** | **10749** | **2252** | **23,727** | **1203** |

* Data sourced from Communities for Climate Protection – New Zealand 2 Actions Profile 2009. ** Data has been extrapolated from respective Council CCP-NZ Milestone 1 Reports, unless otherwise noted. *** Projections for forecast-year are based on a 'business-as-usual' scenario. ^ Data for Auckland Region Council (Carbon Now and Carbon Futures reports) does not conform to the template provided by ICLEI, and as a result does not fit within this table. See Appendix for a graphic representation of Auckland Regional Council's emissions profile. ^^ Data for this Council is not available. ^^^ Data for Hamilton City Council was extrapolated from Figure 1 of the Hamilton City Council's Communities for Climate Protection Programme Local Action Plan (2006). *^ Date for Greater Wellington Regional Council was extrapolated from the Climate Change Mitigation Corporate Action Plan (2008)

Table 3.18: CCP-NZ programme study selection corporate emissions forecast

| Local Government | | Corporate emissions forecast** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Base-year Total Emissions (t-CO2e/y) | Forecast -year | Total Emissions (t-CO2e/y) *** | GHG emissions by Sector (t-CO2e/y)*** | | | | | | % Change from Base-year | GOAL* |
| | | | | | Build-ings | Street-lights | Vehicle Fleet | Empl-oyee Com-mute | Water/ Sewage | Waste | | |
| Regional Council | Auckland^ | 0 | | 0 | | | | | | | | 20% by 2019 |
| | Environment Canterbury | 1227 | 2010 | 1585 | 280 | | 794 | 474 | | 37 | 29.1769 | |
| | Greater Wellington*^ | 6361 | | 0 | | | | | | | -100 | 41% below 2006 levels by 2050. |
| | Hawkes Bay | 886 | 2012 | 1007 | 161 | | 695 | | 151 | | 13.6569 | |
| District Council | Far North | 1960 | 2011 | 2414 | 231 | 384 | 449 | | 1350 | | 23.1633 | |
| | Kaikoura | 99 | 2011 | 222 | 16 | 42 | 59 | | 101 | 4 | 124.242 | 100% below 2001 levels by 2020. |
| | Kapiti Coast^^ | 0 | | 0 | | | | | | | | 15% below 2001 levels by 2010. |
| | Rotorua | 4462 | 2010 | 4607 | 1041 | 20 | 1039 | | 2507 | | 3.24966 | Stabilize at or below 2006 levels by 2010 |
| | Southland | 2924 | 2010 | 3008 | 1449 | 83 | 626 | | 850 | | 2.87278 | Stabilize at 2005 level by 2015; reduce by 20% by 2025. |
| City Council | Auckland | 10444 | 2010 | 10,898 | 6,625 | 2,750 | 901 | 622 | | | 4.34699 | |
| | Christchurch | 30069 | 2010 | 30393 | 9324 | 9923 | 950 | 589 | 9607 | | 1.07752 | 69% below 1994 by 2011. |
| | Dunedin^^ | 0 | | 0 | | | | | | | | |
| | Hamilton^^^ | 8194 | 2010 | 15812 | 4072 | 3016 | 1727 | | 4832 | 2165 | 92.9705 | 20% below 2001 levels by 2020. |
| | Nelson | 1077 | 2010 | 1460 | 378 | 409 | 134 | | 539 | | 35.5617 | Stabilize at 2004 level by 2012: reduce 40% below 2004 level by 2020. |
| | Waitakere | 6059 | 2010 | 10045 | 3096 | 1696 | 867 | 604 | 3782 | | 65.7864 | 50% below 2001 level by 2021. |
| | Wellington | 12577 | 2010 | 13,000 | 7,619 | 1,599 | 3,096 | | 686 | | 3.36328 | Stabilize at 2003 level by 2010, and reduce by 40% by 2020 and 80% by 2050 |
| **TOTAL** | | **86339** | | **94451** | **34292** | **19922** | **11337** | **2289** | **24405** | **2206** | **9.39552** | |

* Data sourced from Communities for Climate Protection – New Zealand 2 Actions Profile 2009. ** Data has been extrapolated from respective Council CCP-NZ Milestone 1 Reports, unless otherwise noted. *** Projections for forecast-year are based on a 'business-as-usual' scenario. ^ Data for Auckland Region Council (Carbon Now and Carbon Futures reports) does not conform to the template provided by ICLEI, and as a result does not fit within this table. See Appendix for a graphic representation of Auckland Regional Council's emissions profile. ^^ Data for this Council is not available. ^^^ Data for Hamilton City Council was extrapolated from Figure 1 of the Hamilton City Council's Communities for Climate Protection Programme Local Action Plan (2006). *^ Date for Greater Wellington Regional Council was extrapolated from the Climate Change Mitigation Corporate Action Plan (2008)

Table 3.19: CCP-NZ programme study selection community emissions profile

| Local Government | | Community emissions profile** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Base-year | Total Emissions (t-CO2e/y) | GHG emissions by Sector (t-CO2e/y) | | | | |
| | | | | Residential | Commercial | Industrial | Transport | Waste |
| Regional Council | Auckland^ | | 0 | | | | | |
| | Environment Canterbury | 2001 | 4758372 | 370756 | 314536 | 1289689 | 2160056 | 623335 |
| | Greater Wellington*^ | | 0 | | | | | |
| | Hawkes Bay | | 0 | | | | | |
| District Council | Far North | 2006 | 375,640 | | | | | |
| | Kaikoura | 2001 | 25062 | 2600 | 3555 | 7493 | 8741 | 2673 |
| | Kapiti Coast^^ | | 0 | | | | | |
| | Rotorua | 2001 | 580503 | 49937 | 48267 | 174811 | 185830 | 121658 |
| | Southland | 2001 | 605,447 | 22,655 | 12,578 | 496,403 | 68,216 | 5,595 |
| City Council | Auckland | 2001 | 3432608 | 299945 | 424593 | 1099021 | 1422003 | 187046 |
| | Christchurch | 2001 | 3,288,277 | 505,808 | 391,598 | 1,019,994 | 886,572 | 484,305 |
| | Dunedin^^ | | 0 | | | | | |
| | Hamilton^^^ | 2001 | 1144000 | 183040 | 137280 | 366080 | 331760 | 125840 |
| | Nelson | 2001 | 400535 | 30845 | 34315 | 163584 | 107766 | 64025 |
| | Waitakere | 2001 | 900354 | 118709 | 56810 | 150432 | 390334 | 184069 |
| | Wellington | 2001 | 1,078,794 | 122,285 | 214,806 | 191,809 | 345,811 | 204,083 |
| **TOTAL** | | | **16,589,592** | **1706580** | **1638338** | **4959316** | **5907089** | **2002629** |

* Data sourced from Communities for Climate Protection – New Zealand 2 Actions Profile 2009. ** Data has been extrapolated from respective Council CCP-NZ Milestone 1 Reports, unless otherwise noted. *** Projections for forecast-year are based on a 'business-as-usual' scenario. ^ Data for Auckland Region Council (Carbon Now and Carbon Futures reports) does not conform to the template provided by ICLEI, and as a result does not fit within this table. See Appendix for a graphic representation of Auckland Regional Council's emissions profile. ^^ Data for this Council is not available. ^^^ Data for Hamilton City Council was extrapolated from Figure 1 of the Hamilton City Council's Communities for Climate Protection Programme Local Action Plan (2006). *^ Date for Greater Wellington Regional Council was extrapolated from the Climate Change Mitigation Corporate Action Plan (2008)

Table 3.20: CCP-NZ programme study selection community emissions forecast

| Local Government | | Community emissions forecast** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Base-year Total Emissions (t-CO2e/y) | Forecast-year | Forecast-year Total Emissions (t-CO2e/y) *** | GHG emissions by Sector (t-CO2e/y) | | | | | % Change from Base-year | GOAL* |
| | | | | | Residential | Commercial | Industrial | Transport | Waste | | |
| Regional Council | Auckland^ | 0 | | 0 | | | | | | | |
| | Environment Canterbury | 4758372 | 2010 | 5685804 | 340526 | 349322 | 1446505 | 2888312 | 661139 | 19.4905 | |
| | Greater Wellington*^ | 0 | | 0 | | | | | | | |
| | Hawkes Bay | 0 | | 0 | | | | | | | |
| District Council | Far North | 375640 | 2011 | 392,103 | | | | | | 4.38265 | |
| | Kaikoura | 25062 | 2010 | 32757 | 3377 | 3979 | 8956 | 11099 | 5346 | 30.7039 | 60% below 2001 levels by 2015. |
| | Kapiti Coast^^ | 0 | | 0 | | | | | | | Stabilize at 2001 levels by 2010. |
| | Rotorua | 580503 | 2010 | 660626 | 48735 | 53722 | 203240 | 228892 | 126037 | 13.8023 | |
| | Southland | 605447 | 2010 | 708,228 | 24,504 | 14,654 | 594,924 | 68,216 | 5,930 | 16.9761 | |
| City Council | Auckland | 3432608 | 2010 | 4070676 | 345700 | 499173 | 1277511 | 1708210 | 240082 | 18.5884 | |
| | Christchurch | 3288277 | 2010 | 3,490,668 | 476,099 | 433,881 | 1,143,442 | 1,013,672 | 423,574 | 6.15493 | 16% per person below 2008 by 2018. |
| | Dunedin^^ | 0 | | 0 | | | | | | | |
| | Hamilton^^^ | 1144000 | 2010 | 1301000 | 208160 | 156120 | 416320 | 377290 | 143110 | 13.7238 | Stabilize at 2001 level by 2020. |
| | Nelson | 400535 | 2010 | 413010 | 31893 | 37057 | 156679 | 131519 | 55862 | 3.11458 | Stabilize at 2001 level by 2012: reduce 40% below 2001 level by 2020. |
| | Waitakere | 900354 | 2010 | 1126009 | 146555 | 63848 | 178531 | 481751 | 255324 | 25.0629 | 80% per capita below 2001 level by 2051. |
| | Wellington | 1078794 | 2010 | 1,212,601 | 119,022 | 238,042 | 214,088 | 437,366 | 204,083 | 12.4034 | Stabilize at 2001 levels by 2010; reduce by 30% by 2020; 80% by 2050 |
| **TOTAL** | | **16589592** | | **19,093,482** | **1744571** | **1849798** | **5640196** | **7346327** | **2120487** | **15.0931** | |

* Data sourced from Communities for Climate Protection – New Zealand 2 Actions Profile 2009. ** Data has been extrapolated from respective Council CCP-NZ Milestone 1 Reports, unless otherwise noted. *** Projections for forecast-year are based on a 'business-as-usual' scenario. ^ Data for Auckland Region Council (Carbon Now and Carbon Futures reports) does not conform to the template provided by ICLEI, and as a result does not fit within this table. See Appendix for a graphic representation of Auckland Regional Council's emissions profile. ^^ Data for this Council is not available. ^^^ Data for Hamilton City Council was extrapolated from Figure 1 of the Hamilton City Council's Communities for Climate Protection Programme Local Action Plan (2006). *^ Date for Greater Wellington Regional Council was extrapolated from the Climate Change Mitigation Corporate Action Plan (2008)

Table 3.21: Greater Wellington Regional Council corporate GHG emissions forecast 2005 to 2050

| Greater Wellington Regional Council | Year | % Decrease (average across sectors)^ | Total Emissions (t-CO2e/y) | Emissions Source by Weight(t-CO2e) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Buildings | Vehicle Fleet | Airline Travel | Employee Commute | Water/ Sewage | Waste |
| | 2005 | Base-year | 6,361 | 384 | 890 | 39 | 247 | 4,761 | 40 |
| | 2012 | 18 | 5216 | 308 | 623 | 37 | 173 | 4047 | 28 |
| | 2020 | 28 | 4578 | 269 | 534 | 35 | 149 | 3571 | 20 |
| | 2050 | 41 | 3774 | 192 | 356 | 24 | 99 | 3095 | 8 |

Data was extrapolated from Greater Wellington Regional Council's Climate Change Mitigation Corporate Action Plan (2008). ^ For specific reduction goals by corporate sector, see Section 2.4 of Greater Wellington Regional Council's Climate Change Mitigation Corporate Action Plan (2008)

Table 3.22: Hamilton City Council GHG emission reduction goal by total emissions

| Hamilton City Council | Total Emissions (t-CO2e/y) | | |
|---|---|---|---|
| | Base-year 2001 | Forecast-year 2010 | Goal-year 2020 |
| Corporate | 8194 | 15812 | 6556 |
| Community | 1144000 | 1301000 | 1144000 |

Data was extrapolated from Hamilton City Council's CCP Local Action Plan (2006)

Table 3.23: Waitakere City Council community GHG emission reduction goal by total emissions

| Waitakere City Council | Total Emissions (t-CO2e/y) | | |
|---|---|---|---|
| | Base-year 2001 | Forecast-year 2010 | Goal-year 2051 |
| Community | 900354 | 1126009 | 180071 |

Data was extrapolated from Waitakere City Council's CCP Local Action Plan

Table 3.24: Wellington City Council GHG emission reduction goal by total emissions

| Wellington City Council | Total Emissions (t-CO2e/y) | | |
|---|---|---|---|
| | Base-year 2001/ 2003* | Forecast-year 2010 | Goal-year 2050 |
| Corporate | 12577 | 13000 | 2516 |
| Community | 1078794 | 1212601 | 215759 |

Data was extrapolated from Wellington City Council's Greenhouse Gas Emission Analysis and Forecast and the Wellington City Council Climate Change Action Plan (2007). * Community Base-year was 2001, while the Corporate Base-year was 2003.

Table 5.2: CS1 - ministry selection criteria

| Department | S1 |
|---|---|
| Archives New Zealand | |
| Department of Corrections | |
| Crown Law Office | |
| New Zealand Customs Service | |
| Department of Building and Housing | |
| Department of Conservation | |
| Department of Internal Affairs | |
| Department of Labour | |
| Department of the Prime Minister and Cabinet | |
| Education Review Office | |
| Government Communications Security Bureau | |
| Inland Revenue Department | |
| Land Information New Zealand | |
| Ministry of Agriculture and Forestry | |
| Ministry for Culture and Heritage | |
| Ministry of Economic Development | |
| Ministry of Foreign Affairs and Trade | |
| Ministry for the Environment | |
| Ministry of Fisheries | |
| Ministry of Defence | |
| Ministry of Education | |
| Ministry of Health | |
| Ministry of Justice | |
| Ministry of Research, Science, and Technology | |
| Ministry of Transport | |
| Ministry of Pacific Island Affairs | |
| Ministry of Social Development | |
| Ministry of Women's Affairs | |
| National Library of New Zealand | |
| New Zealand Food Safety Authority | |
| State Services Commission | |
| Statistics New Zealand | |
| Te Puni Kokiri | |
| Treasury, The | |

Data was extrapolated from NZ Govt. (2007)

Table 5.3: CS2 - council selection criteria

| Local Government | | Stage | | Year Joined | Milestone Reached | Population | Geography (North/South Island) |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | | | | |
| Regional Council | Auckland | | | 2006 | 4 | 1,237,239 | North |
| | Environment Canterbury | | | 2004 | 2 | 508,102 | South |
| | Environment Waikato | | | 2007 | 1 | 365,292 | North |
| | Greater Wellington | | | 2007 | 1 | 434,034 | North |
| | Hawkes Bay | | | 2007 | 1 | 142,710 | North |
| | Taranaki | | | 2004 | 2 | 100,263 | North |
| District Council | Carterton | | | 2004 | 3 | 6,870 | North |
| | Far North | | | 2007 | 1 | 55,845 | North |
| | Franklin | | | 2007 | 3 | 55,506 | North |
| | Kaikoura | | | 2004 | 3 | 3,456 | South |
| | Kaipara | | | 2007 | 1 | 17,127 | North |
| | Kapiti Coast | | | 2004 | 3 | 44,640 | North |
| | Masterton | | | 2004 | 3 | 22,623 | North |
| | New Plymouth | | | 2007 | 2 | 72,000 | North |
| | Papakura | | | 2006 | 1 | 48,783 | North |
| | Rodney | | | 2004 | 1 | 89,601 | North |
| | Rotorua | | | 2005 | 3 | 62,526 | North |
| | Southland | | | 2005 | 3 | 27,440 | South |
| | South Waikato | | | 2004 | 3 | 21,291 | North |
| | South Wairarapa | | | 2005 | 3 | 8,532 | North |
| | Waipa | | | 2007 | 1 | 41,148 | North |
| | Western Bay of Plenty | | | 2008 | 1 | 42,075 | North |
| City Council | Auckland | | | 2005 | 1 | 382,540 | North |
| | Christchurch | | | 2004 | 5 | 369,000 | South |
| | Dunedin | | | 2006 | 1 | 114,891 | South |
| | Hamilton | | | 2004 | 4 | 138,500 | North |
| | Hutt | | | 2008 | Political Declaration | 95,421 | North |
| | Manukau | | | 2006 | 1 | 310,335 | North |
| | Nelson | | | 2007 | 3 | 41,679 | South |
| | North Shore | | | 2005 | 1 | 200,091 | North |
| | Palmerston North | | | 2008 | 1 | 80,000 | North |
| | Porirua | | | 2007 | 1 | 48,546 | North |
| | Waitakere | | | 2004 | 4 | 175,299 | North |
| | Wellington | | | 2004 | 5 | 172,971 | North |

Data was extrapolated from CCP-NZ (2009)

Table 6.1: CS1 - support

| SUB-THEME | MINISTRY | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|
| | DOC | IRD | MED | MFE | MOH | TREASURY | |
| Senior Management Leadership | | No | No | Yes, with CEOs | No | No, but lots of lip service! | Lack of senior management leadership |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.4 for further details.

Table 6.2: CS1 - application

| SUB-THEMES | MINISTRY | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|
| | DOC | IRD | MED | MFE | MOH | TREASURY | |
| Programme Delivery (was it effective?) | No; Should not have been run by the MFE | No; Programme lost in the numbers | No; MFE's credibility in question | No; Quick start-up; tight timeline | No; Too fast; not prepared; poorly managed by MFE | No; The MFE made it up as they went along | Delivery was too fast; Ministries were unprepared; the MFE was ineffective |
| Operating Budget | No additional resources | | | High profile programme, no resources | No budget | | Cost was pushed to the Ministries |
| Methodology (Data Requirements) | | | Inconsistent requirements | | Scope changed constantly | Misunderstanding with regard to requirements | Data requirements were inconsistent |
| Formal Benchmarking | No formal benchmarking; but DOC did benchmark against the other lead-core agencies. | No formal benchmarking; but IRD did benchmark internationally | None | No formal benchmarking; benchmarked against private sector | None | No formal benchmarking; Treasury benchmarked against other lead-core agencies | No formal benchmarking |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.4 for further details.

Table 6.3: CS1 - termination

| SUB-THEMES | MINISTRY | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|
| | DOC | IRD | MED | MFE | MOH | TREASURY | |
| Rationale | Political | Political | Political | Political | Political and Economic | Economic | Political ideology is the common rationale |
| Opposition to Termination | MFE, but they had no time! CNPS was hidden from community | MFE | MFE | "Not our job as officials to fight" | MFE and DOC | IRD, MFE and DOC | Decision to terminate faced little opposition |
| Evaluation | No evaluation | | Not clear | Not clear | No evaluation | No evaluation | Ministries were not involved in the determination of the programme's effectiveness |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.4 for further details.

Table 6.4: CS1 - outcome

| SUB-THEMES | MINISTRY | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|
| | DOC | IRD | MED | MFE | MOH | TREASURY | |
| Awareness | Yes | Yes | Yes | Yes | Yes | Yes | Management's awareness increased |
| Emissions and Cost Reductions | Yes | | Yes | Yes | Yes | Too soon to tell | Emissions reductions and cost savings did occur |
| Networking | Yes | Yes | Yes | Yes | Yes | Yes | Networking was effective |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.4 for further details.

Table 6.5: CS1 - moving forward

| SUB-THEME | MINISTRY | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|
| | DOC | IRD | MED | MFE | MOH | TREASURY | |
| Next Steps | Carbon management | No carbon management | Carbon management (efficiency and cost savings) | Carbon management (no goal for carbon reductions) | Carbon management (cost neutral) | Reduction programmes will continue (but scaled back) | Continue with initiatives, albeit scaled back; No goal for carbon neutrality |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.4 for further details.

Table 6.6: CS2 S1 - in the beginning

| SUB-THEMES | REGIONAL COUNCIL | | | | DISTRICT COUNCIL | | | | | CITY COUNCIL | | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Auckland | Environment Canterbury | Greater Wellington | Hawke's Bay | Far North | Kaikoura | Kapiti Coast | Rotorua | South-land | Auckland | Christ-church | Dunedin | Hamilton | Nelson | Waitakere | Wellington | |
| Rationale for Joining | Gain political mandate | Show leadership | Easy contribution to climate change response | Show leadership | Show Leadership | Aligned with strategic direction | Personal wish of Mayor | Show leadership | | Show leadership | Show leadership | Reduce city and operation carbon footprint | Politically driven | Show leadership | Aligned with strategic direction | Show leadership | Show leadership |
| Aim (Carbon Management/ Neutral) | Neutral | | Management | Management | Neutral | Neutral | Management | | | Neutral | | | | | | Neutral | Management |
| Leadership to Community | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | | Yes | Yes | Yes | Yes |
| Climate Change Policy pre-CCP-NZ | | Yes | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes | Yes - energy | | | Yes | Yes | Yes |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.5 for further details.

Table 6.7: CS2 S1 - support

| SUB-THEMES | REGIONAL COUNCIL | | | | DISTRICT COUNCIL | | | | | CITY COUNCIL | | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Auckland | Environment Canterbury | Greater Wellington | Hawke's Bay | Far North | Kaikoura | Kapiti Coast | Rotorua | Southland | Auckland | Christchurch | Dunedin | Hamilton | Nelson | Waitakere | Wellington | |
| Senior Management Leadership (Within Council) | | Not a lot | | | | | | Yes | | | | Yes | | Yes | Yes | | Yes |
| Engagement with ICLEI | | | Yes | No | | Yes | | Yes | | | Yes | | | | Not in the end | | Yes |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.5 for further details.

Table 6.8: CS2 S1 - application

| SUB-THEMES | REGIONAL COUNCIL | | | | DISTRICT COUNCIL | | | | | CITY COUNCIL | | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Auckland | Environment Canterbury | Greater Wellington | Hawke's Bay | Far North | Kaikoura | Kapiti Coast | Rotorua | Southland | Auckland | Christ-church | Dunedin | Hamilton | Nelson | Waitakere | Wellington | |
| Programme Delivery (was it effective?) | No; Focused on getting as many councils on board as possible | No; Didn't provide for adaptation | No; Strategy not right for New Zealand | No; Didn't recognize role of regional council | | | | | Yes; Well put together | | | No; Too focused on community component | No; Stalled on community side | | No; Programme did not evolve with the times | | Not effective |
| Programme Methodology (robust enough?) | No; Difficult getting data from suppliers | | No | No; Boundaries not well defined | | Yes; Tailor-made to any community | | | Yes; Valuable framework | No; Data quality was an issue of concern | No; Boundaries not well defined | No; Access to data was an issue | No; Concern with regard to efficacy | No; Difficulties with emission calculations | No; Lack of rigour | No; Lacked scope; inventory tool not flexible | Not robust enough; Data quality a concern |
| Formal Benchmarking | Yes | | | | | No | No | | No | | No | | | | No | No | No |
| Barrier to Achieving next Milestone | Programme ended | Time and resource constraints | Resource constraints | Low priority | | Action Plan focus changed | | | Programme ended | Change in council; quality of data | All milestones complete | | | Measurability of community | Access to data | Uncertain of value | Time restriction |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.5 for further details.

Table 6.9: CS2 S1 - termination

| SUB-THEMES | REGIONAL COUNCIL | | | | DISTRICT COUNCIL | | | | | CITY COUNCIL | | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Auckland | Environment Canterbury | Greater Wellington | Hawke's Bay | Far North | Kaikoura | Kapiti Coast | Rotorua | Southland | Auckland | Christchurch | Dunedin | Hamilton | Nelson | Waitakere | Wellington | |
| Rationale | Political | Political | Programme ineffective; NOT political | Economic | Economic | Political | Political | Political/ Economic | Political | Political | Political | Political | Political | Political | Economic | Economic | Political/ Economic |
| Opposition to Termination | | | | | No | | | | | | | No | Encouraged by ICLEI to write letter of support | | No | Yes | No |
| Evaluation | Yes, but not involved | Yes, but not involved | Yes | No | Yes, but not involved | No | No | | No | No | No | No | Not sure | No | | No | No |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.5 for further details.

Table 6.10: CS2 S1 - outcome

| SUB-THEMES | REGIONAL COUNCIL | | | | DISTRICT COUNCIL | | | | | CITY COUNCIL | | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Auckland | Environment Canterbury | Greater Wellington | Hawke's Bay | Far North | Kaikoura | Kapiti Coast | Rotorua | Southland | Auckland | Christchurch | Dunedin | Hamilton | Nelson | Waitakere | Wellington | |
| Networking/ Collaboration | | Yes | Yes | No | No | Yes | No | | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| Awareness | | | | Yes | Yes | Yes | | | | | | Yes | | Yes | Yes | Yes | Yes |
| Values Embedded | Yes | No | | Yes & No | Yes | | Yes | Yes | Yes | No | Yes | Yes | | Yes | Yes | Yes | Yes |
| Link to other Programmes | Yes | Not really | | No | Yes | Yes | No | | No | Yes | Yes | No | | No | No | Yes | Split: Yes/ No |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.5 for further details.

Table 6.11: CS2 S1 - final thoughts

| SUB-THEMES | REGIONAL COUNCIL | | | | DISTRICT COUNCIL | | | | | CITY COUNCIL | | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Auckland | Environment Canterbury | Greater Wellington | Hawke's Bay | Far North | Kaikoura | Kapiti Coast | Rotorua | Southland | Auckland | Christchurch | Dunedin | Hamilton | Nelson | Waitakere | Wellington | |
| Impetus for Action | Yes | | Yes | Yes | Yes | | Yes | Yes | | Yes | | Yes | Yes | | Yes | Yes | Yes |
| Success | Yes | Yes/ no | Yes/ no | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.5 for further details.

Table 6.12: CS2 S1 - moving forward

| SUB-THEMES | REGIONAL COUNCIL | | | | DISTRICT COUNCIL | | | | | CITY COUNCIL | | | | | | | OVERALL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Auckland | Environment Canterbury | Greater Wellington | Hawke's Bay | Far North | Kaikoura | Kapiti Coast | Rotorua | South-land | Auckland | Christ-church | Dunedin | Hamilton | Nelson | Waitakere | Wellington | |
| Momentum | Built even further | Slowed | | | Yes | Yes | Yes | | Yes | | Built even further | Yes | Slowed | Built even further | Yes | | Yes |
| Next Steps (Carbon Management / Neutral) | Carbon Now Programme | Manage carbon | Low-carbon fleet | Energy audit | Develop Action Plan | Implement Action Plan | Develop Emission Reduction Plan | Continue with CCP-NZ objectives | Manage carbon | Energy management | Manage carbon | Develop a sustainable framework | No mandate for action, no steer | Next Step Programme | Continue with Action Plan | Work towards carbon neutrality (goal: 2012/12) | Carbon management |
| Reduction Target | | Reduce | | | Reduce | Carbon zero by 2015 | | Stabilize at 2006 levels by 2010 | Stabilize | No goals | 50% reduction by 2050 | No goals | No goals | Create position statement | | Reduce emissions by 30% by 2030 | Reduce, Stabilize, No goal |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.5 for further details.

Table 6.13: CS2 S2 - in the beginning

| SUB-THEMES | REGIONAL COUNCIL | | DISTRICT COUNCIL | | CITY COUNCIL | | | OVERALL |
|---|---|---|---|---|---|---|---|---|
| | Auckland | Greater Wellington | Rotorua | Southland | Dunedin | Nelson | Wellington | |
| Initial Contact (who approached who?) | | Don't Know | ICLEI approached council | Don't Know | Council approached ICLEI | ICLEI approached council | ICLEI approached council | ICLEI approached council |
| Timing (Rationale for joining when it did) | New political buy-in | Keen to do something | Right thing to do | Right thing to do | | Fears of hidden costs dissipated | Increased priority for responding to climate change | Climate change featured more prominently as a priority |
| Aim (Carbon management/ neutral) | | Manage | | Manage | Manage | Manage | Manage... carbon neutral came later | Manage carbon |
| Prior Policy (Climate change thinking before joining programme) | Yes - sustainability | Yes - sustainability | No | No | No | Yes- adaptation | No | Split Yes/ No |
| Buy-in (Within council and management) | | Mixed | No | Not consistent | Mixed | Mixed | Mixed | Buy-in within council and management was inconsistent |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.6 for further details.

Table 6.14: CS2 S2 - support

| SUB-THEMES | REGIONAL COUNCIL | | DISTRICT COUNCIL | | CITY COUNCIL | | | OVERALL |
|---|---|---|---|---|---|---|---|---|
| | Auckland | Greater Wellington | Rotorua | Southland | Dunedin | Nelson | Wellington | |
| Engagement with ICLEI (Were they engaged?) | No | Yes | Yes | Yes | No | Yes | Yes | Majority YES |
| Engagement with Partners (Were MFE and LGNZ engaged?) | No | No | No | No | No | No | No | Consistent NO |
| Role of Intern (Was the intern effective?) | | Yes | | No | | No | | Majority believed that the intern was ineffective |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.6 for further details.

Table 6.15: CS2 S2 - application

| SUB-THEMES | REGIONAL COUNCIL | | DISTRICT COUNCIL | | CITY COUNCIL | | | OVERALL |
|---|---|---|---|---|---|---|---|---|
| | Auckland | Greater Wellington | Rotorua | Southland | Dunedin | Nelson | Wellington | |
| Programme Methodology (Was the programme robust enough) | No | No | Yes | Yes | No | | No | Not robust enough |
| Transferability (Did the programme transfer well from CCP-Australia?) | No | Yes | Yes | | No | | | Split Yes/ No |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.6 for further details.

Table 6.16: CS2 S2 - outcome

| SUB-THEMES | REGIONAL COUNCIL | | DISTRICT COUNCIL | | CITY COUNCIL | | | OVERALL |
|---|---|---|---|---|---|---|---|---|
| | Auckland | Greater Wellington | Rotorua | Southland | Dunedin | Nelson | Wellington | |
| Cost Benefit Analysis (Did the benefits outweigh the costs?) | Yes | Yes | Yes | Not sure | Yes | Yes | Yes | Benefits outweigh costs |
| Emission Reductions (Were reductions experienced?) | Yes | Not sure | Yes | Yes | Yes | Yes | Not sure | Reduction in emissions occurred |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.6 for further details.

Table 6.17: CS2 S2 - final thoughts and membership fee

| SUB-THEMES | REGIONAL COUNCIL | | DISTRICT COUNCIL | | CITY COUNCIL | | | OVERALL |
|---|---|---|---|---|---|---|---|---|
| | Auckland | Greater Wellington | Rotorua | Southland | Dunedin | Nelson | Wellington | |
| Programme's Greatest Influence on Council | Gaining political buy-in; awareness | Awareness raising | Catalyst for action | Awareness raising | Awareness raising | Catalyst for action | Catalyst for action | Raise awareness; Catalyst for action |
| Summing up Council's Experience with Programme | Mixed experience | Fine; 6.5/10 | Positive | Positive | Disappointing | Positive | Positive | Positive experience |
| Had the MFE not Paid the Initial Membership Fee, would Council have Joined the Programme? | Yes | No | Don't Know | | Yes | No | Yes | Split Yes/ No |
| If the Programme had Continued, would Council have Paid the Membership Fee? | Yes | No | Yes | Yes | No | No | No | Split Yes/ No |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.6 for further details.

Table 6.18: CS2 S2 - moving forward

| SUB-THEMES | REGIONAL COUNCIL | | DISTRICT COUNCIL | | CITY COUNCIL | | | OVERALL |
|---|---|---|---|---|---|---|---|---|
| | Auckland | Greater Wellington | Rotorua | Southland | Dunedin | Nelson | Wellington | |
| Has Council Joined another Programme? | Yes | No | Yes | No | Yes | No | No | Split Yes/ No |
| Carbon Management Linked into Reporting? | | | No | No | No | Informally | | No |
| Next Steps (Carbon Neutral/ Management/ other) | Don't know | Manage/ reduce | Sustainability policy | Manage | Reduce | Manage | Manage | Manage and/ or reduce emissions |
| Reduction Target | | Yes - corporate: 41% by 2040 | No target | No target | No target | Stabilize by 2012 based on 2004; reduce by 40% by 2020 | Stabilize based on 2010 levels; corporate reduce by 40% by 2020, community by 30% by 2020 | Reduce and/ or stabilize |

Data is derived from semi-structured interviews with managers from respective ministry. See Table 5.6 for further details.

Table 6.19: Presence of word(s) in council Annual Report during the first year of programme membership

| Council | | Year Joined CCP-NZ | Climate Change | Carbon | Carbon Management | Carbon Neutral | CCP-NZ |
|---|---|---|---|---|---|---|---|
| Regional | Auckland | 2006 | Yes - 3 times | Yes - 1 times | No | No | Yes - 2 times |
| | Wellington | 2007 | Yes - 4 times | No | No | No | Yes - 2 times |
| District | Rotorua | 2005 | No | No | No | No | No |
| | Southland | 2005 | No | No | No | No | No |
| City | Dunedin | 2006 | No | No | No | No | No |
| | Nelson | 2007 | No | Yes - 1 time | No | No | No |
| | Wellington* | 2004 | No | Yes- 5 times | No | No | No |
| TOTAL | | Yes | 2 | 3 | 0 | 0 | 2 |
| | | No | 5 | 4 | 7 | 7 | 5 |
| | | TOTAL | 7 | 7 | 7 | 7 | 7 |

Data was extrapolated from the respective council's Annual Report for the year council joined the CCP-NZ Programme. * Data comes from the Executive Summary for the 2004/05 Annual Report.

Table 6.20: Presence of word(s) in council Annual Report (2007/ 2008)

| Council | | Climate Change | Carbon | Carbon Management | Carbon Neutral | CCP-NZ |
|---|---|---|---|---|---|---|
| Regional | Auckland | Yes - 8 times | Yes - 5 times | No | No | Yes - 2 times |
| | Wellington | Yes - 2 times | Yes - 1 time | No | No | No |
| District | Rotorua | Yes - 2 times | No | No | No | Yes - 2 times |
| | Southland | No | No | No | No | No |
| City | Dunedin | Yes - 1 time | No | No | No | No |
| | Nelson | Yes - 4 times | Yes - 1 time | No | No | No |
| | Wellington | Yes - 20 times | Yes - 11 times | No | Yes - 4 timesYes | Yes - 1 time |
| TOTAL | Yes | 6 | 4 | 0 | 1 | 3 |
| | No | 1 | 3 | 7 | 6 | 4 |
| | TOTAL | 7 | 7 | 7 | 7 | 7 |

Data was extrapolated from the respective council's Annual Report 2007/ 2008.

Table 6.21: Presence of word(s) in council Annual Report (2008/ 2009)

| Council | | Climate Change | Carbon | Carbon Management | Carbon Neutral | CCP-NZ |
|---|---|---|---|---|---|---|
| Regional | Auckland | Yes - 6 times | Yes - 4 times | No | No | No |
| | Wellington | Yes - 1 time | Yes - 3 times | No | No | No |
| District | Rotorua | Yes - 2 times | Yes - 1 time | No | No | No |
| | Southland | No | Yes - 2 times | No | No | No |
| City | Dunedin | No | No | No | No | No |
| | Nelson | No | Yes - 1 time | No | No | No |
| | Wellington | Yes - 9 times | Yes - 15 times | No | No | No |
| TOTAL | Yes | 4 | 6 | 0 | 0 | 0 |
| | No | 3 | 1 | 7 | 7 | 7 |
| | TOTAL | 7 | 7 | 7 | 7 | 7 |

Data was extrapolated from the respective council's Annual Report 2008/ 2009.

Table 6.22: Presence of word(s) in council Annual Report (2009/ 2010)

| Council | | Climate Change | Carbon | Carbon Management | Carbon Neutral | CCP-NZ |
|---|---|---|---|---|---|---|
| Regional | Auckland | Data Not Available | Data Not Available | Data Not Available | Data Not Available | Data Not Available |
| | Wellington | Yes - 1 time | No | No | No | No |
| District | Rotorua | Yes - 2 times | Yes - 1 time | No | No | No |
| | Southland | No | Yes - 2 times | No | No | No |
| City | Dunedin | Yes - 1 time | Yes - 5 times | No | No | No |
| | Nelson | Yes - 3 times | Yes - 4 times | No | No | No |
| | Wellington | Yes - 9 times | Yes - 9 times | No | No | No |
| TOTAL | Yes | 5 | 5 | 0 | 0 | 0 |
| | No | 1 | 1 | 6 | 6 | 6 |
| | Data Not Available | 1 | 1 | 1 | 1 | 1 |
| | TOTAL | 7 | 7 | 7 | 7 | 7 |

Data was extrapolated from the respective council's Annual Report 2009/ 2010.

Table 6.23: Presence of word(s) in council Long Term Community Council Plan (2009 to 2019)

| Council | | Climate Change | Carbon | Carbon Management | Carbon Neutral | CCP-NZ |
|---|---|---|---|---|---|---|
| Regional | Auckland | Yes - 20 times | Yes - 5 times | No | Yes - 1 time | Yes - 1 time |
| | Wellington | Yes - 30 time | Yes - 9 times | No | Yes - 1 time | Yes - 1 time |
| District | Rotorua | Yes - 15 times | Yes - 18 times | No | No | Yes - 2 times |
| | Southland | Yes - 16 times | Yes - 8 times | No | No | Yes - 3 times |
| City | Dunedin | Yes - 25 times | Yes - 1 time | No | No | No |
| | Nelson | Yes - 8 times | Yes - 6 times | No | No | Yes - 2 times |
| | Wellington | Yes - 9 times | Yes - 12 times | No | Yes - 2 times | No |
| TOTAL | Yes | 7 | 7 | 0 | 3 | 5 |
| | No | 0 | 0 | 7 | 4 | 2 |
| | TOTAL | 7 | 7 | 7 | 7 | 7 |

Data was extrapolated from the respective council's Long Term Community Council Plan 2009 to 2019.

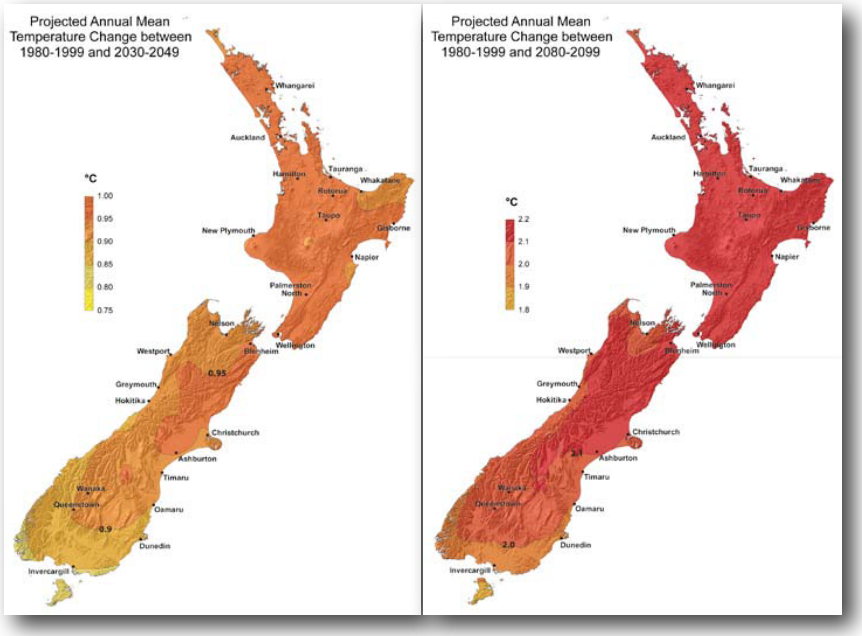
Table 6.24: Presence of word(s) in council Annual Plan (2010)

| Council | | Climate Change | Carbon | Carbon Management | Carbon Neutral | CCP-NZ |
|---|---|---|---|---|---|---|
| Regional | Auckland | Yes - 7 times | No | No | No | No |
| | Wellington | Yes -1 time | Yes - 2 times | No | No | No |
| District | Rotorua | No | No | No | No | No |
| | Southland | No | Yes - 1 time | No | No | No |
| City | Dunedin | Yes - 5 times | Yes - 1 time | No | No | No |
| | Nelson | Yes - 4 times | Yes -1 time | No | No | No |
| | Wellington | Yes - 2 times | No | No | No | No |
| TOTAL | Yes | 5 | 4 | 0 | 0 | 0 |
| | No | 2 | 3 | 7 | 7 | 7 |
| | TOTAL | 7 | 7 | 7 | 7 | 7 |

Data was extrapolated from the respective council's Annual Plan 2010.

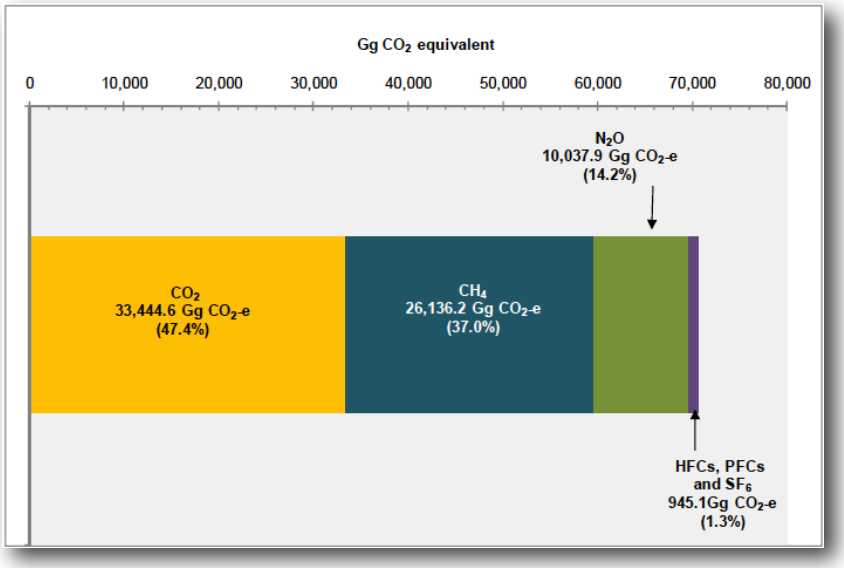
## APPENDIX - FIGURES

Figure 3.1: Projected changes in annual mean temperature relative to 1990



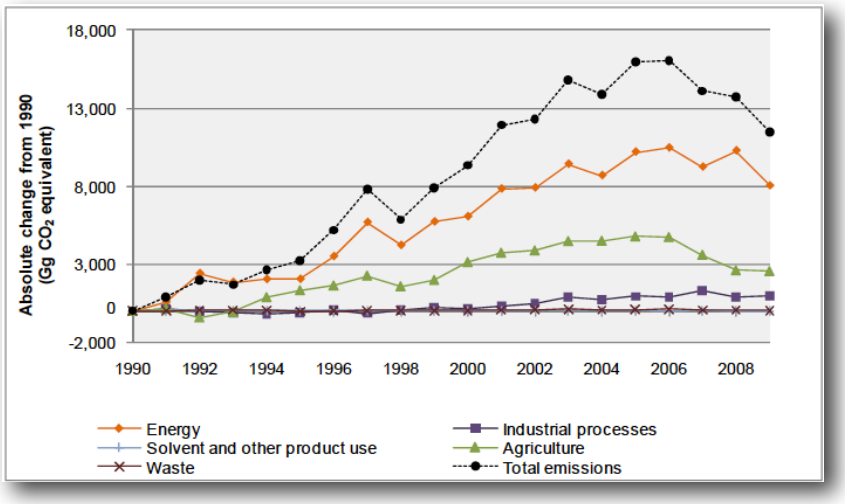

NIWA (2008). This figure represents the average over 12 climate models for A1B emissions scenario.

Figure 3.5: New Zealand's total emissions by gas in 2009



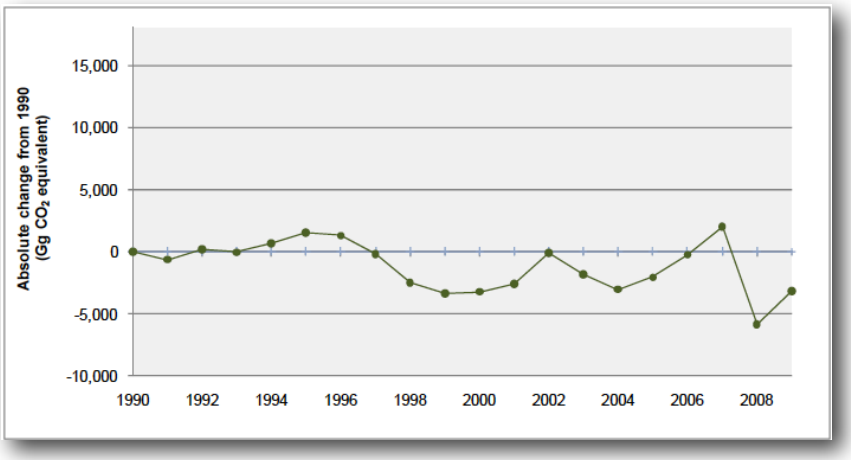

NZ Govt. (2011c). CO2, CH4 and N2O values exclude emissions and removals from LULUCF.

Figure 3.7: Absolute change in New Zealand's total emissions by sector from 1990 to 2009




NZ Govt. (2011c). Total emissions exclude emissions and removals from the LULUCF sector.

Figure 3.9: Absolute change from 1990 in New Zealand's net removals/ emissions from the LULUCF sector from 1990 to 2009 (UNFCCC reporting)




NZ Govt. (2011c)

Figure 3.26: CCP-NZ study selection council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[415]

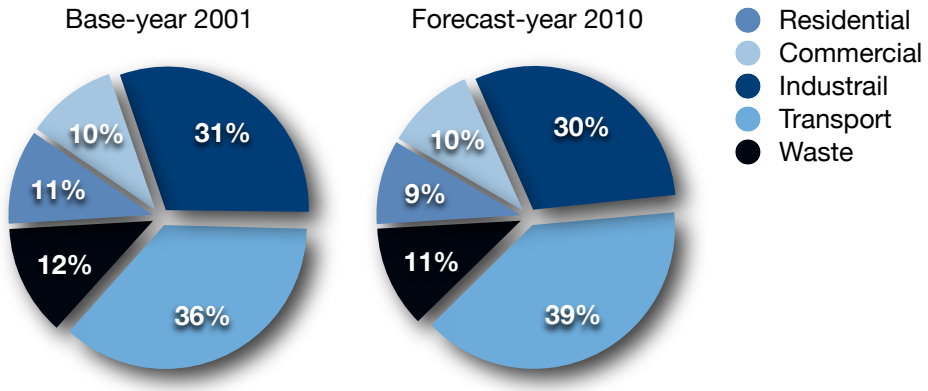



Figure 3.27: Environment Canterbury Regional Council corporate emission weights by sector for base-year (2001) and forecast-year (2010)[416]

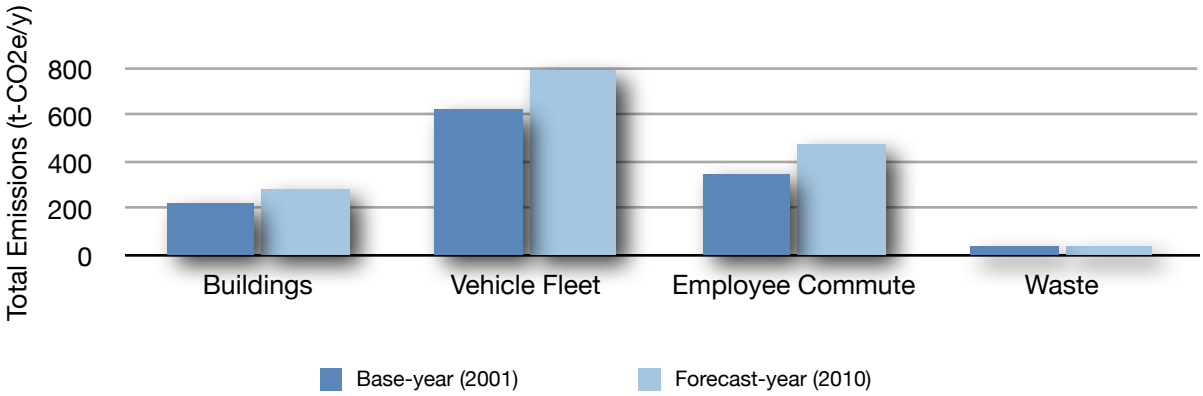
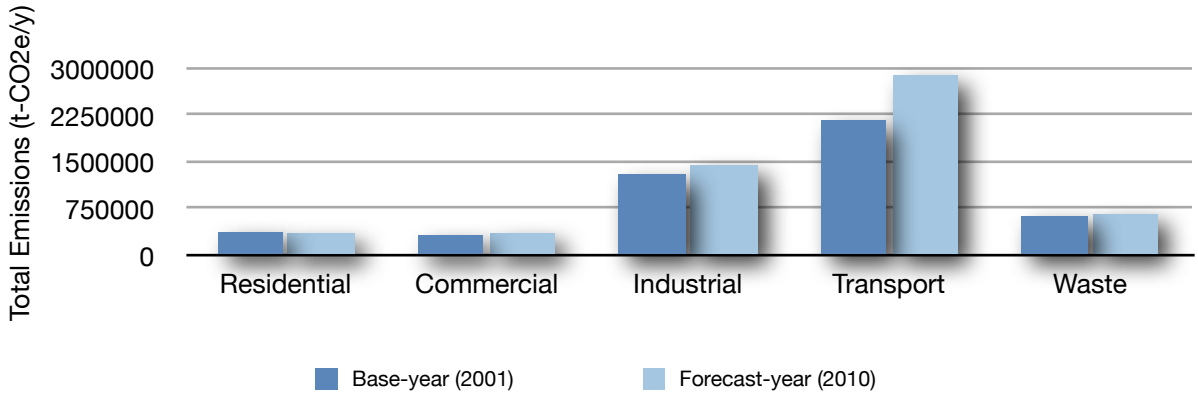



Figure 3.29: Environment Canterbury Regional Council community emission weights by sector for base-year (2001) and forecast-year (2010)[417]




[415] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[416] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[417] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

Figure 3.31: Greater Wellington Regional Council's corporate GHG emission reduction goal by sector, as a proportion of forecast year[418]

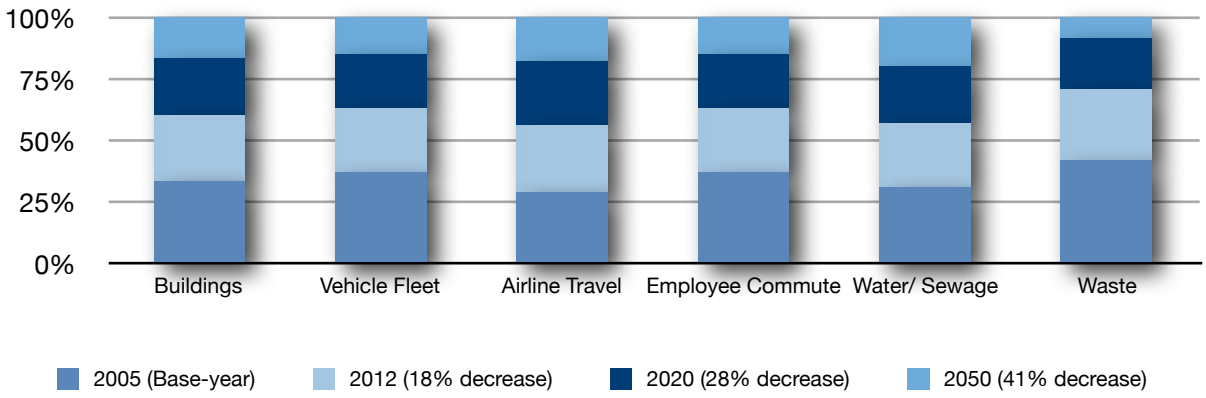



Figure 3.35: Kaikoura District Council community emission weights by sector for base-year (2001) and forecast-year (2010)[419]

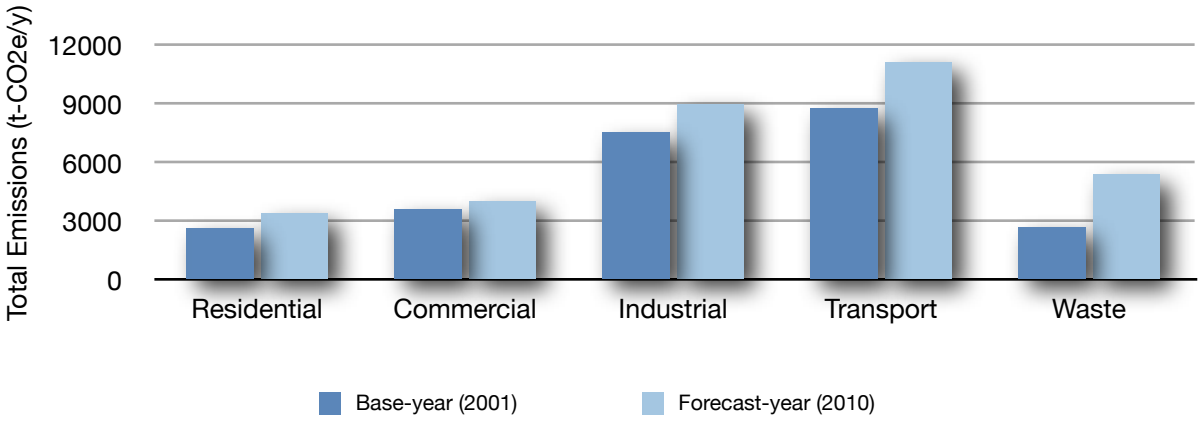
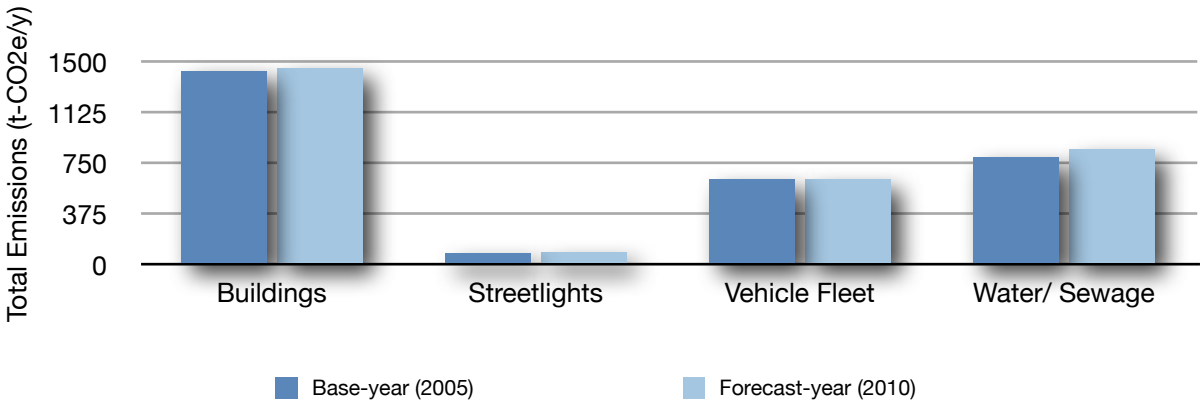



Figure 3.37: Southland District Council corporate emission weights by sector for base-year (2005) and forecast-year (2010)[420]




[418] Adapted from Table 3.21. See Appendix, Table 3.21 for data set.

[419] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[420] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.19 and Table 3.20, for data sets.

Figure 3.39: Southland District Council community emission weights by sector for base-year (2001) and forecast-year (2010)[421]

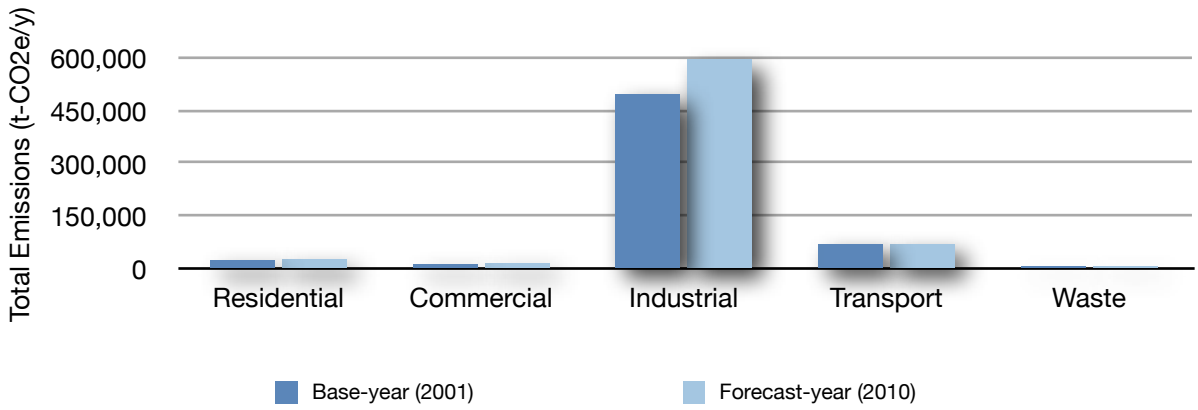



Figure 3.41: Hamilton City Council corporate emission weights by sector for base-year (2001) and forecast-year (2010)[422]

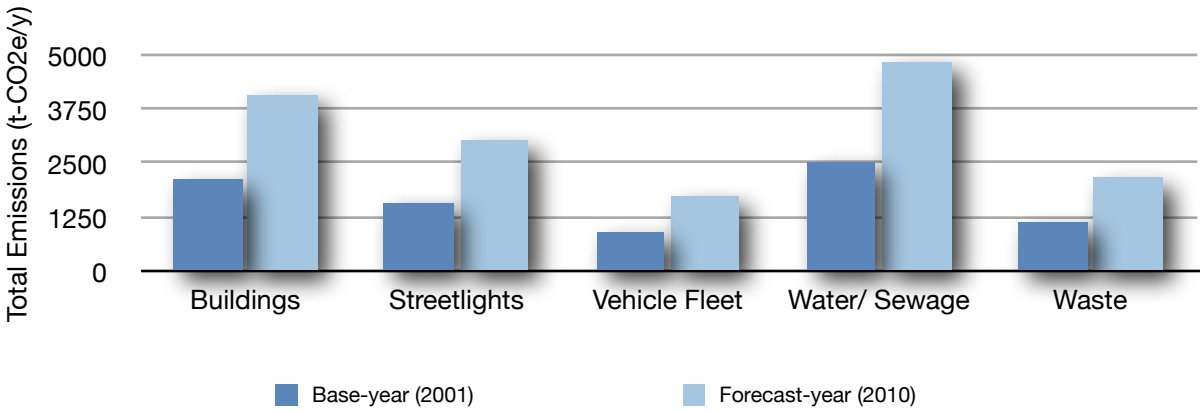
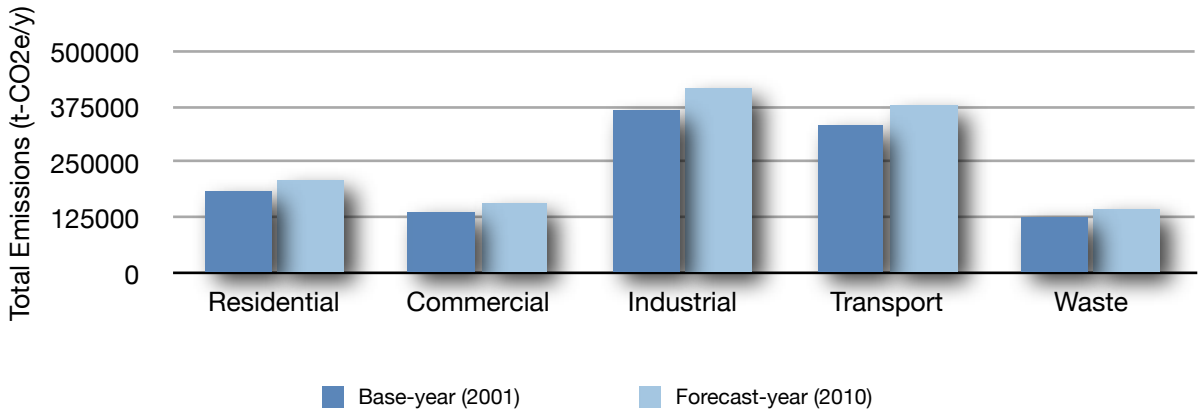



Figure 3.43: Hamilton City Council community emission weights by sector for base-year (2001) and forecast-year (2010)[423]




[421] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[422] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[423] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

Figure 3.46: Waitakere City Council corporate emission weights by sector for base-year (2002) and forecast-year (2010)[424]

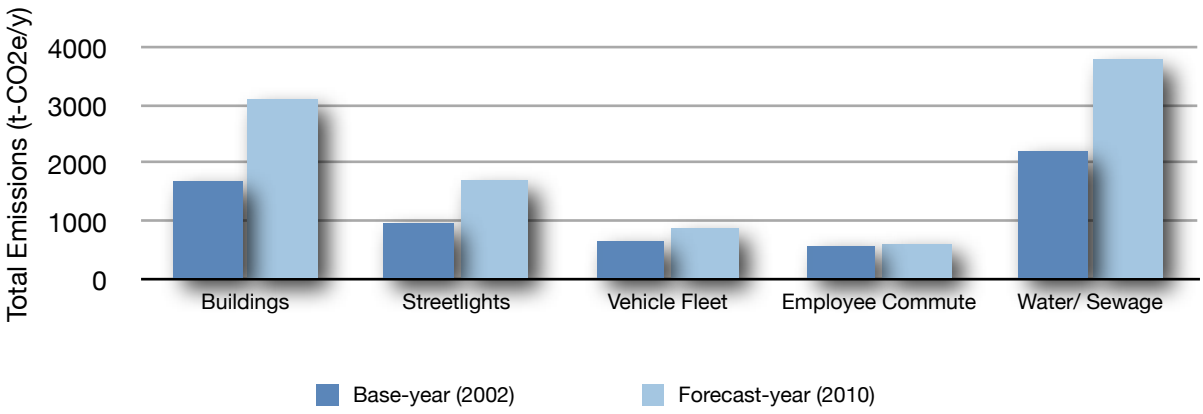



Figure 3.48: Waitakere City Council community emission weights by sector for base-year (2001) and forecast-year (2010)[425]

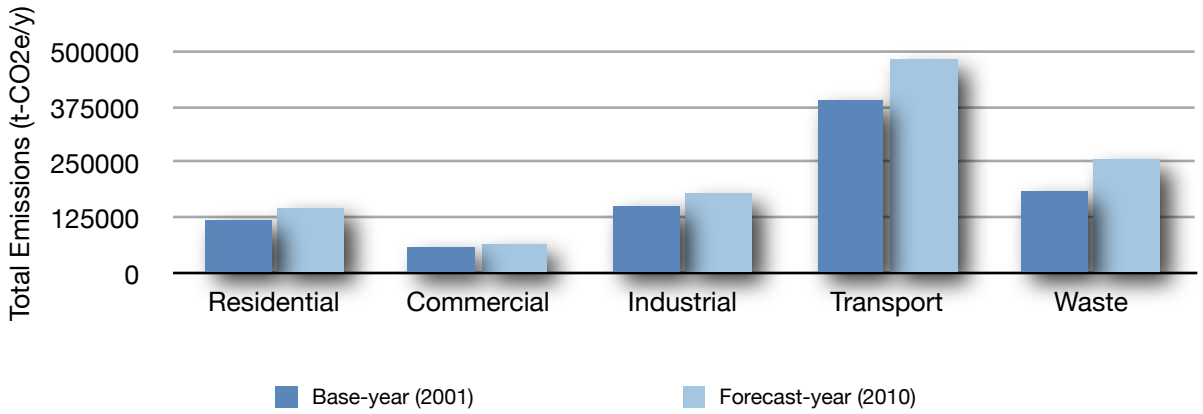
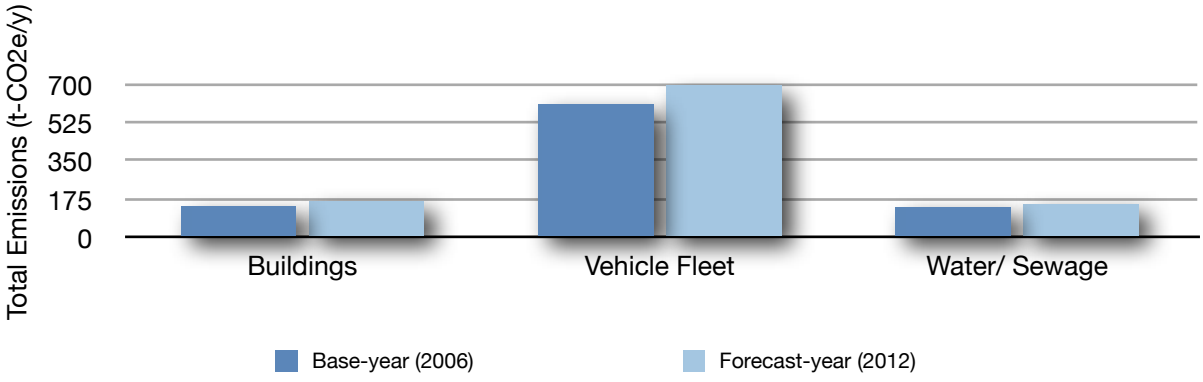



Figure 3.51: Hawkes Bay Regional Council corporate emission weights by sector for base-year (2006) and forecast-year (2012)[426]




[424] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[425] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[426] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

Figure 3.52: Far North District Council corporate emission weights by sector for base-year (2006) and forecast-year (2011)[427]

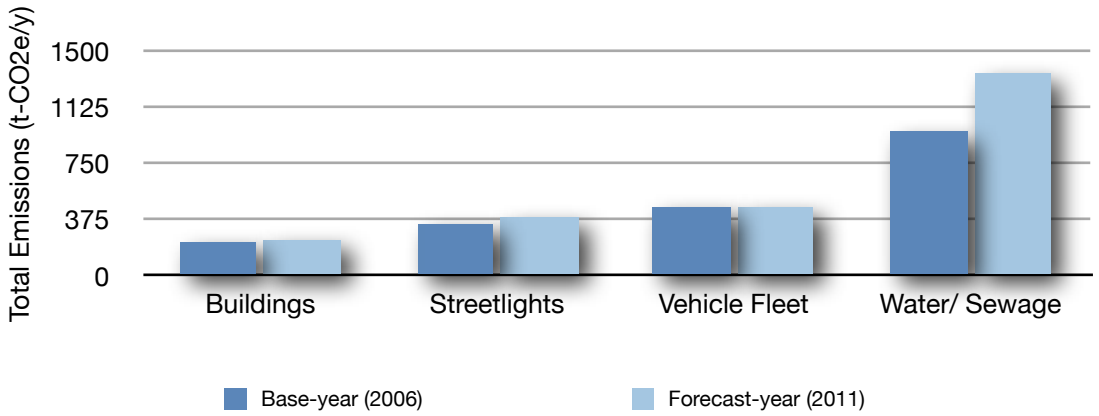



Figure 3.53: Rotorua District Council corporate emission weights by sector for base-year (2001) and forecast-year (2010)[428]

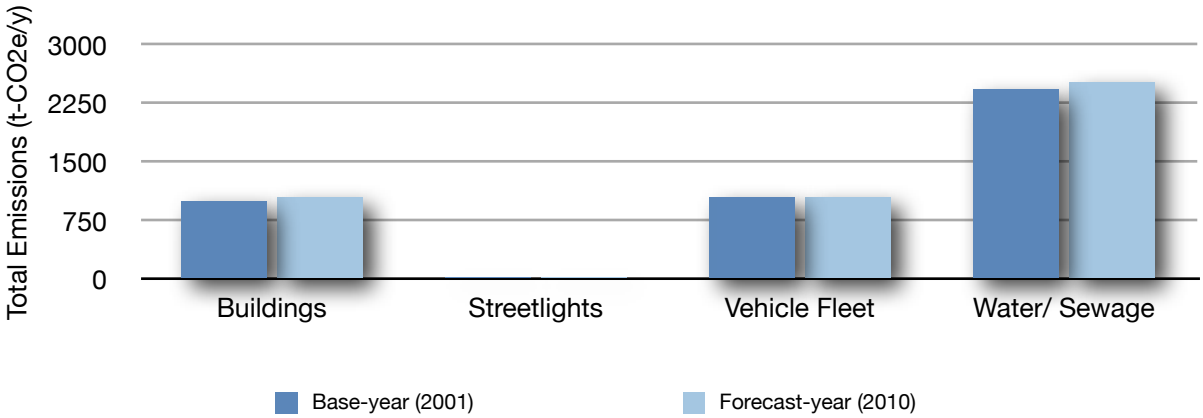
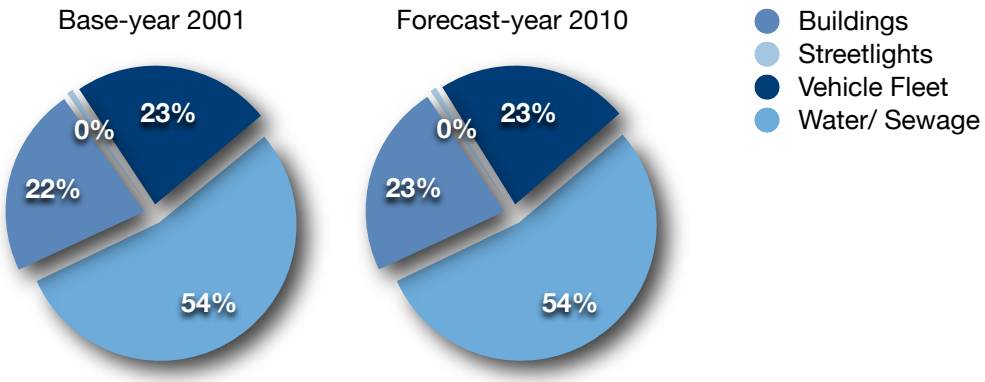



Figure 3.54: Rotorua District Council corporate emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[429]




[427] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[428] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[429] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

Figure 3.55: Rotorua District Council community emission weights by sector for base-year (2001) and forecast-year (2010)[430]

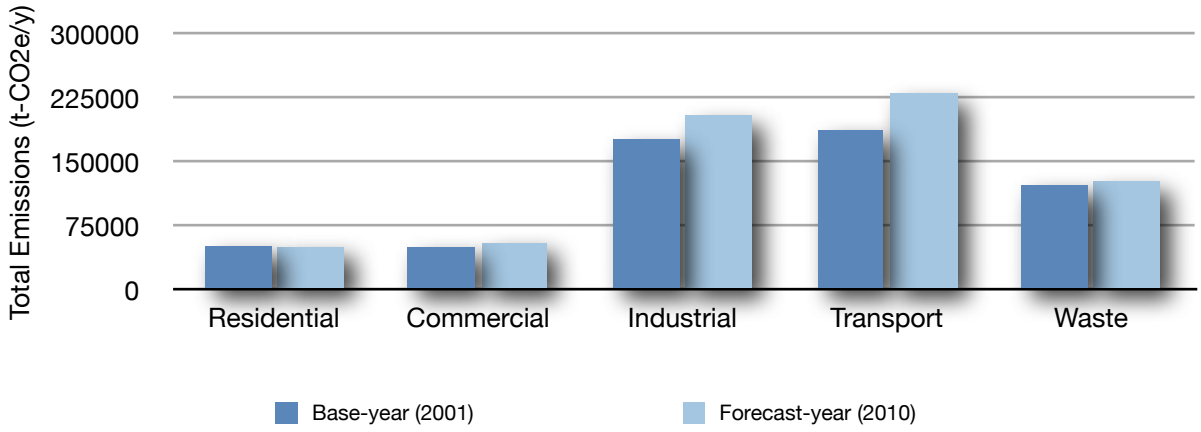



Figure 3.56: Rotorua District Council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[431]

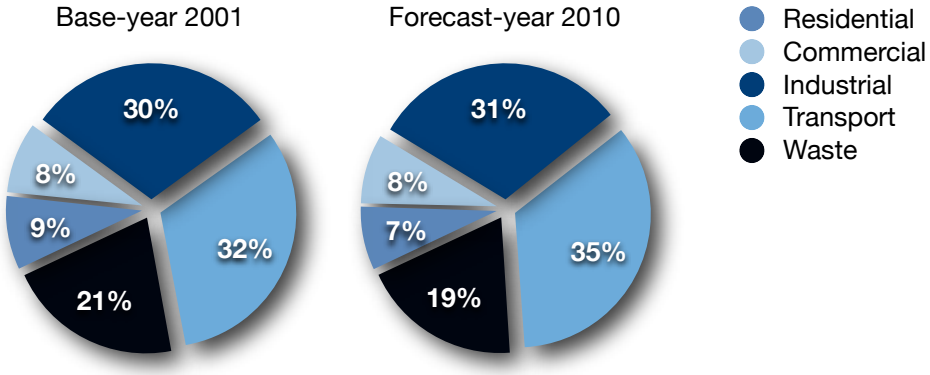
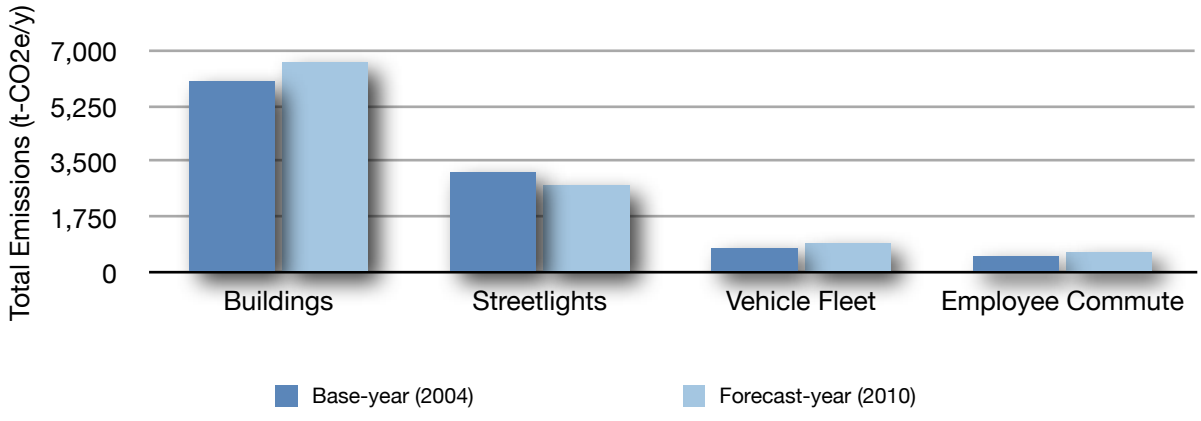



Figure 3.57: Auckland City Council corporate emission weights by sector for base-year (2004) and forecast-year (2010)[432]




[430] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[431] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[432] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

Figure 3.58: Auckland City Council corporate emission weights for base-year (2004) and forecast-year (2010) as proportion of sector[433]

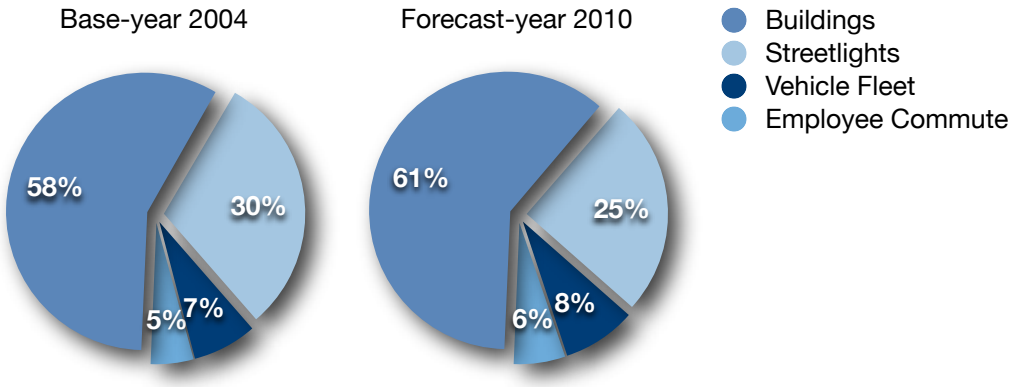



Figure 3.59: Auckland City Council community emission weights by sector for base-year (2001) and forecast-year (2010)[434]

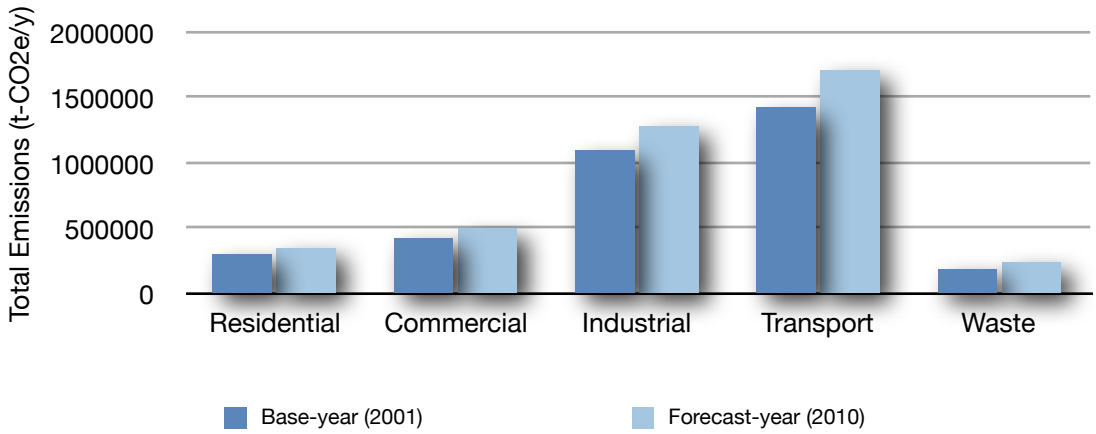
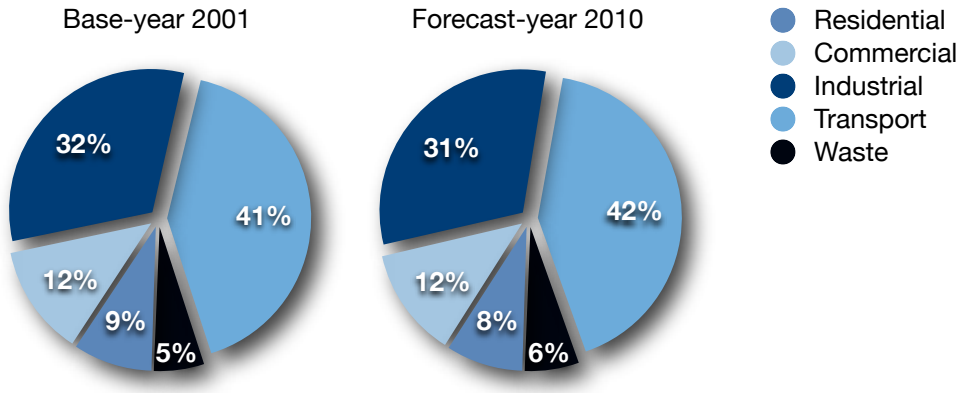



Figure 3.60: Auckland City Council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[435]




[433] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[434] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[435] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

Figure 3.61: Christchurch City Council corporate emission weights by sector for base-year (2001) and forecast-year (2010)[436]

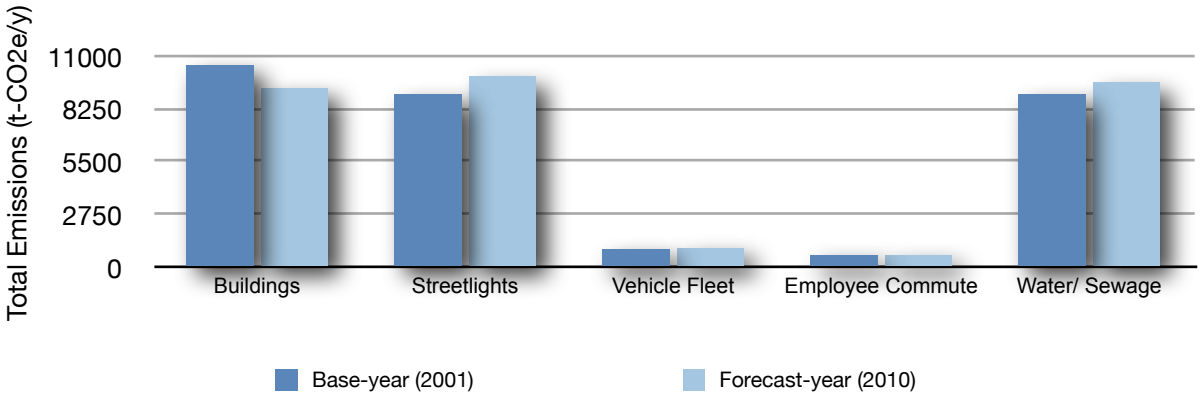



Figure 3.62: Christchurch City Council community emission weights by sector for base-year (2001) and forecast-year (2010)[437]

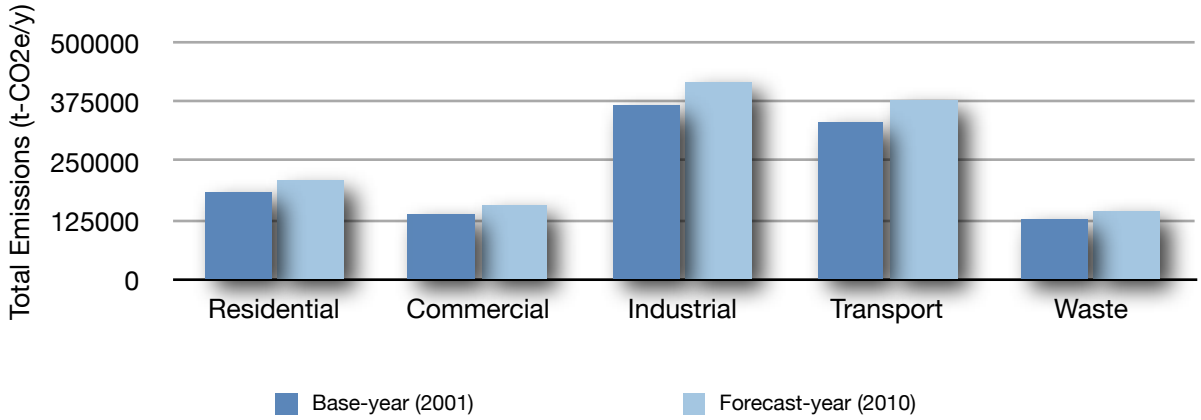
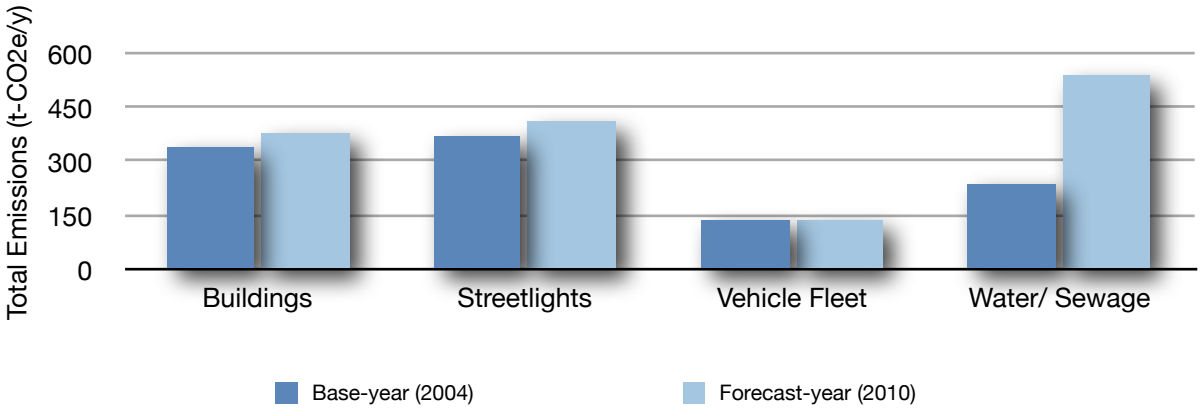



Figure 3.63: Nelson City Council corporate emission weights by sector for base-year (2004) and forecast-year (2010)[438]




[436] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[437] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[438] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

Figure 3.64: Nelson City Council corporate emission weights for base-year (2004) and forecast-year (2010) as proportion of sector[439]

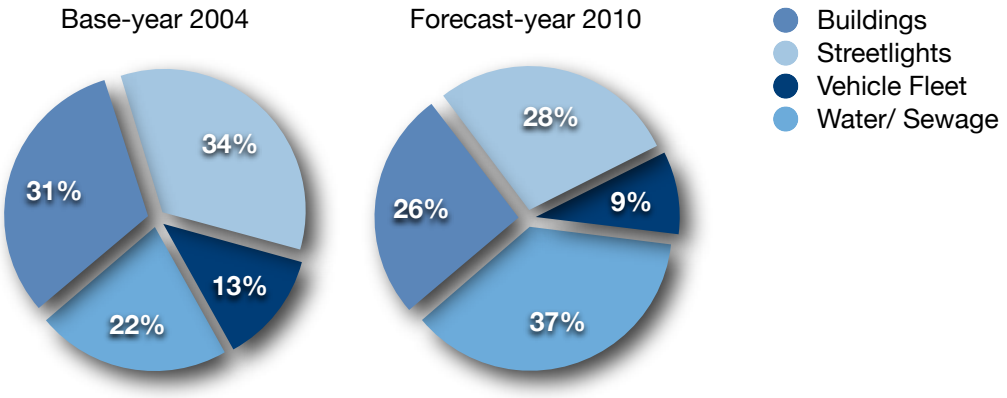



Figure 3.65: Nelson City Council community emission weights by sector for base-year (2001) and forecast-year (2010)[440]

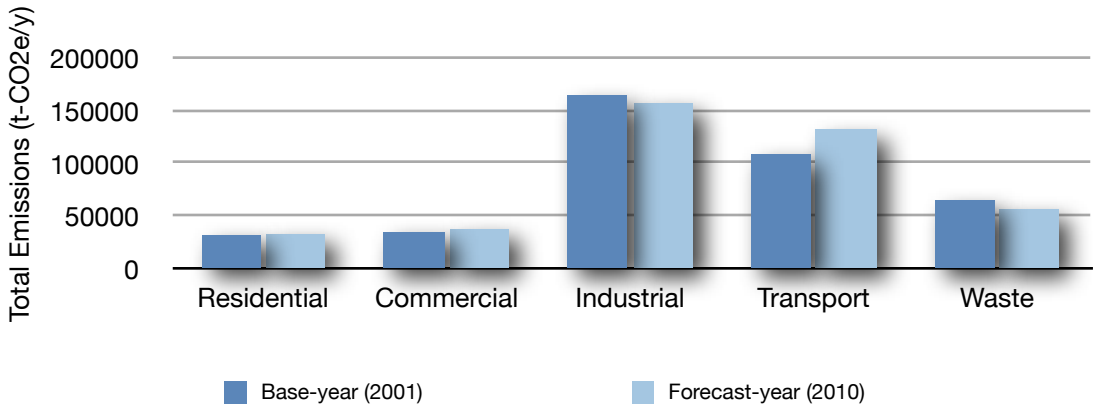
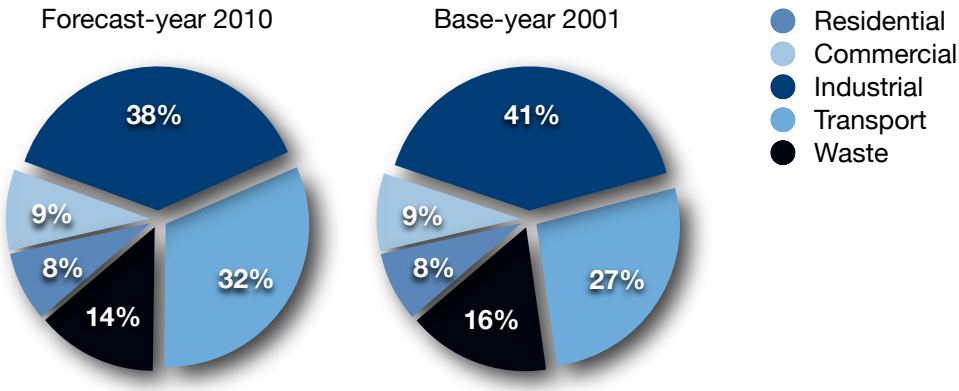



Figure 3.66: Nelson City Council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[441]




[439] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[440] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[441] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

Figure 3.67: Wellington City Council corporate emission weights by sector for base-year (2003) and forecast-year (2010)[442]

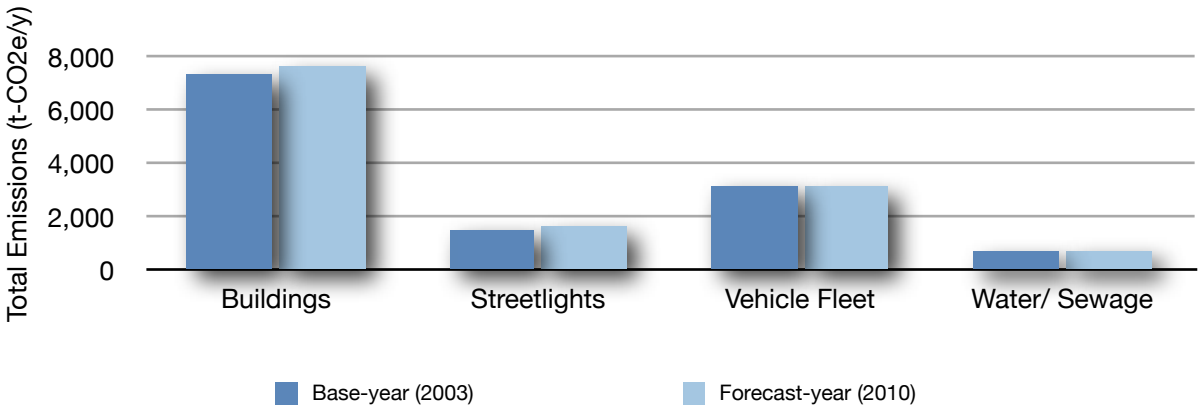



Figure 3.68: Wellington City Council corporate emission weights for base-year (2003) and forecast-year (2010) as proportion of sector[443]

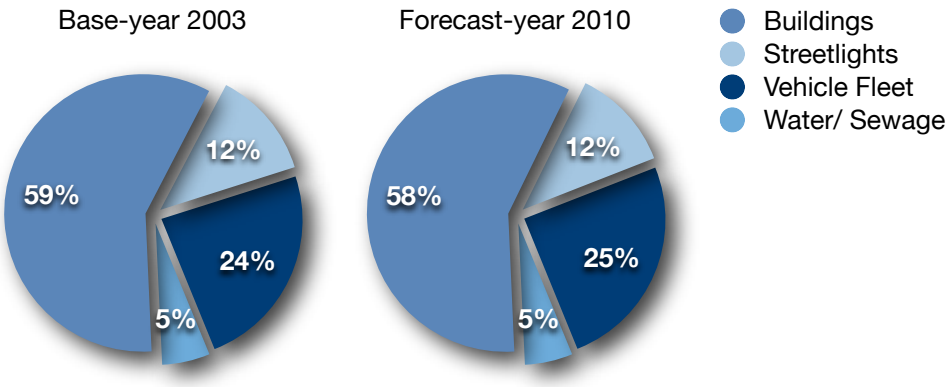
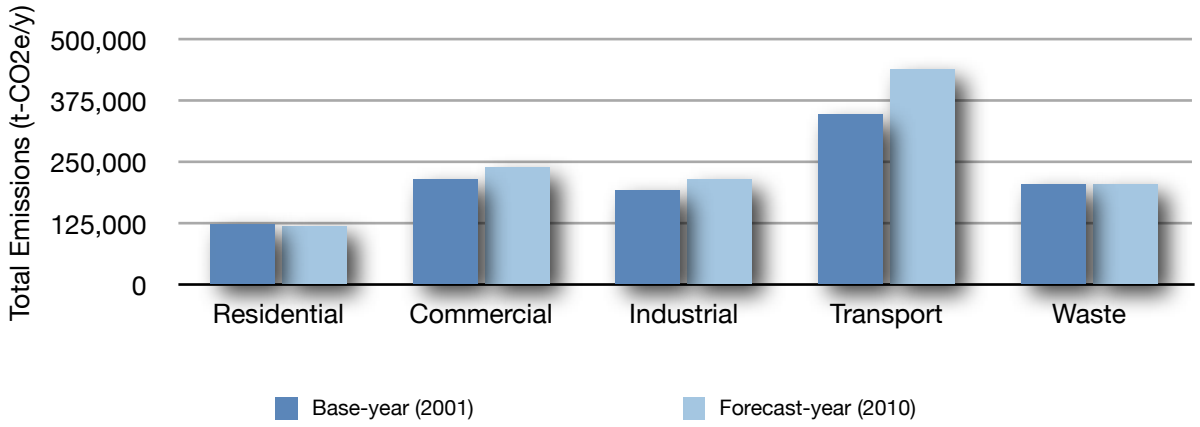



Figure 3.69: Wellington City Council community emission weights by sector for base-year (2001) and forecast-year (2010)[444]




[442] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[443] Adapted from Table 3.17 and Table 3.18. See Appendix, Table 3.17 and Table 3.18, for data sets.

[444] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

Figure 3.70: Wellington City Council community emission weights for base-year (2001) and forecast-year (2010) as proportion of sector[445]

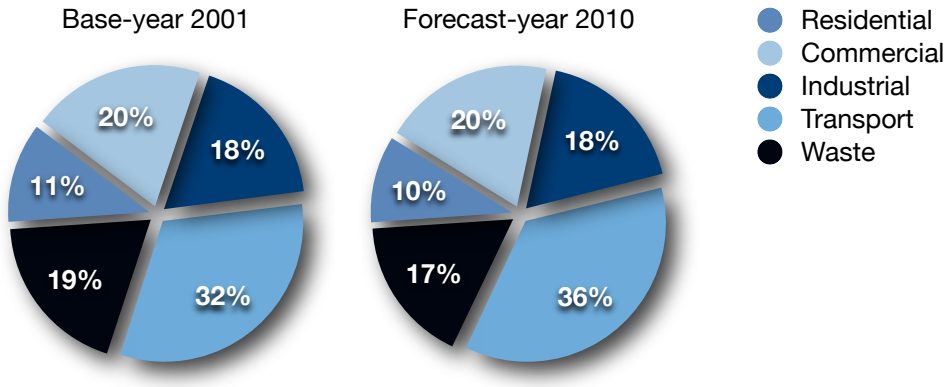
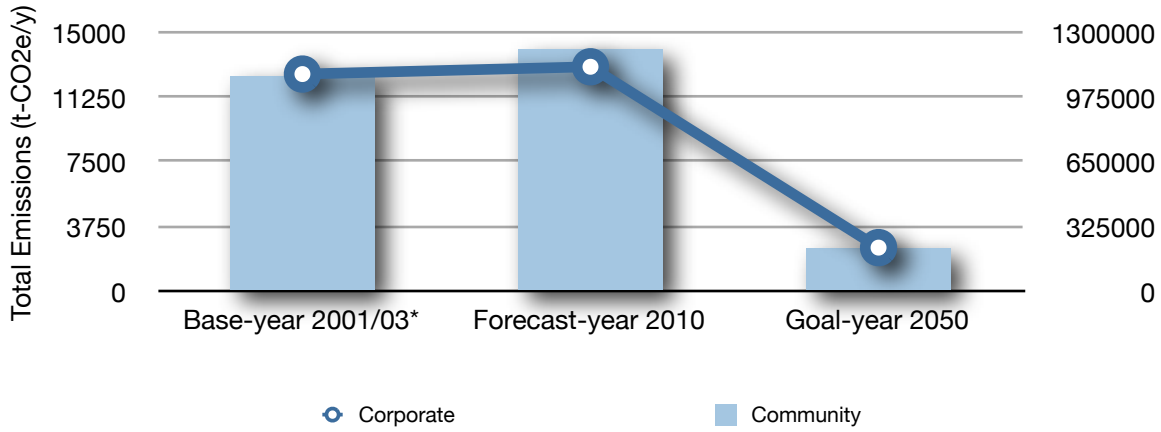



Figure 3.71: Wellington City Council GHG emission reduction goal by total emissions[446]




[445] Adapted from Table 3.19 and Table 3.20. See Appendix, Table 3.19 and Table 3.20, for data sets.

[446] See Appendix, Table 3.24, for data set.

## APPENDIX - ARTICLES

Article 5.1: Human Ethics Committee approval (CS1)

**Ref: HEC 2009/115**

31 August 2009

Jeff Birchall
Department of Accounting & Information Systems
UNIVERSITY OF CANTERBURY

Dear Jeff

The Human Ethics Committee advises that your research proposal "Organisational involvement in climate control: The outcomes and lessons learned from the now dismantled Carbon Neutral Public Sector initiative" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 20 August 2009.

Best wishes for your project.

Yours sincerely

Dr Michael Grimshaw
***Chair, Human Ethics Committee***

Article 5.2: Human Ethics Committee approval (CS2 S1)

**Ref: HEC 2009/167**

25 November 2009

Jeff Birchall
Department of Accounting & Information Systems
UNIVERSITY OF CANTERBURY

Dear Jeff

The Human Ethics Committee advises that your research proposal "Organizational Involvement in Climate Control: The Outcomes and Lessons Learned from the now Dismantled Communities for Climate Protection (CCP) – NZ Programme" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 21 November 2009.

Best wishes for your project.

Yours sincerely

Dr Michael Grimshaw
***Chair, Human Ethics Committee***

Article 5.3: Human Ethics Committee approval (CS2 S2)

**Ref: HEC 2010/144**

22 October 2010

Jeff Birchall
Department of Accounting & Information Systems
UNIVERSITY OF CANTERBURY

Dear Jeff

The Human Ethics Committee advises that your research proposal "Organisational involvement in climate control: carbon management/neutrality work (if any) continued within New Zealand councils since the discontinuation of the Communities for Climate Protection – New Zealand Programme" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 15 October 2010. Further, in point 10 of the consent form, please remove the words "Educational Research" as it should read University of Canterbury Human Ethics Committee.

Best wishes for your project.

Yours sincerely

Dr Michael Grimshaw
***Chair, Human Ethics Committee***

Article 5.4: Invitation to participate

# College of Business and Economics

S. Jeff Birchall, PhD Candidate, Marsden Researcher
Department of Accounting and Information Systems
Tel: +64 3 364 2987 ext. 8277, Fax: + 64 3 364 2727
Email: jeffrey.birchall@canterbury.ac.nz

UNIVERSITY OF CANTERBURY
*Te Whare Wānanga o Waitaha*
CHRISTCHURCH NEW ZEALAND

ORGANIZATIONAL INVOLVEMENT IN CLIMATE CONTROL:
THE OUTCOMES AND LESSONS LEARNED FROM THE NOW DISMANTLED COMMUNITIES FOR CLIMATE PROTECTION – NZ PROGRAMME[447]

To Whom It May Concern:

My name is Jeff Birchall, I am a PhD candidate working as part of a collaborative research team here at the University of Canterbury.

I am writing to request your participation in research into the Communities for Climate Protection (CCP) – NZ programme.

I realize that the CCP-NZ programme has been discontinued, but the initiative is still a focus of a Royal Society of New Zealand Marsden funded, three-year research programme on Carbon Neutrality: Fact or Fiction. At this stage I am redirecting the research towards understanding the lessons from the CCP-NZ for organizational involvement in climate control.

The project is being carried out towards partial completion of a Thesis, as a requirement for a PhD in Accounting and Information Systems by myself, under the supervision of Professor Amanda Ball and Professor Markus Milne, who can be contacted at amanda.ball@canterbury.ac.nz, Phone: 64-3-364-2614; and markus.milne@canterbury.ac.nz, Phone: 64 3 364 2624. They will be pleased to discuss any concerns you may have about participation in the project. The project has been reviewed and approved by the University of Canterbury Human Ethics Committee.

I understand that you are likely to be very busy in your position; however I would very much appreciate the opportunity of interviewing you or your colleagues in order to understand the lessons and outcomes of CCP-NZ, and what (if any) work is likely to continue within the Council.

Thank you for your time.

Kind regards,

S. Jeff Birchall
PhD Candidate, Marsden Researcher
College of Business and Economics
Department of Accounting and Information Systems
University of Canterbury
Private Bag 4800
Christchurch 8140, New Zealand
jeffrey.birchall@canterbury.ac.nz
364 2987x8277

[447] While this represents the initial email to the CCP-NZ programme participants, the email to the CNPS programme participants was the same, save reference to the respective programme.

Article 5.5: Research information brief

# College of Business and Economics

S. Jeff Birchall, PhD Candidate, Marsden Researcher
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CHRISTCHURCH NEW ZEALAND

ORGANIZATIONAL INVOLVEMENT IN CLIMATE CONTROL: THE OUTCOMES AND LESSONS LEARNED FROM THE NOW DISMANTLED COMMUNITIES FOR CLIMATE PROTECTION – NZ PROGRAMME[448]

## INFORMATION

You are invited to participate as a subject in the research project:

'Organizational involvement in climate control: The outcomes and lessons learned from the now dismantled Communities for Climate Protection (CCP) – NZ programme.'

This research is being conducted by Jeff Birchall, for partial completion of a PhD Thesis in the department of Accounting and Information Systems at the University of Canterbury. The project has been reviewed and approved by the University of Canterbury Human Ethics Committee.

The overall objective of the research is to systematically and critically investigate New Zealand public sector organizations' claims and actions around climate change.

The research explores how the New Zealand public sector makes sense of climate change discourse; their drivers and motivations for and ultimate actions on climate change; their accounts and accountabilities for action on climate change; and ultimately their willingness and ability to reorient commitment, identify and behaviour toward fundamental transformation of the New Zealand economy.

The research will focus on New Zealand councils involved in the Communities for Climate Protection (CCP) – NZ programme.

The research will involve semi-structured interviews with the relevant environmental personnel of participant public sector organizations (for example environmental, carbon, emissions, sustainability, or facilities managers).

The semi-structured interviews will be designed to allow a free flow of conversation, driven by the participants' opinion of New Zealand's climate change situation, its relationship with their organisation, and their role in climate change policy and mitigation.

Questions will be guided to identify their perspectives, and opinions on the motivations, drivers and barriers to their organisation adopting climate change strategies. While the structure of the interviews will be prompted by a number of guided questions, the aim is to facilitate a conversation that allows the participants to describe their organisation's position on climate change.

This research is being conducted as part of a Royal Society Marsden funded research project at the University of Canterbury, investigating New Zealand organizations' claims of 'carbon-neutrality.' The finalised results of this initial PhD research project (by way of thesis and publications) may be used to inform subsequent publications from the wider Marsden project. However, no confidential information obtained during this PhD research process will be available to be used by the Marsden research team. The tape recorded interviews will be transcribed in writing with the name of the participant remaining confidential. Raw data transcripts will not be available to anyone other than myself and my project supervisors, and neither will the researcher (or supervisors) discuss the content of these

[448] While this represents the information brief sent to the CCP-NZ programme participants, the information brief sent to the CNPS programme participants was the same, save reference to the respective programme.

transcripts with anyone beyond the anonymised and disguised extracts that are made available through the PhD thesis and other published works arising from it.

All participants will be provided information regarding the study and the research will only commence under voluntary informed consent, and when the rights of privacy and rights to withdrawal are agreed. To remove any risks of misrepresentation, the participant and any other interested member of the organisation will be sent the interview transcript if they wish. If the organisation finds any reason not to agree with the researcher's work, the organisation is free to withdraw from the study or recommend revision of the drafted work. The final copy of the PhD thesis will be publicly available at the University of Canterbury and on the university's website.

The project is being carried out towards partial completion of a Thesis, as a requirement for a PhD in Accounting and Information Systems by Jeff Birchall, under the supervision of Professor Amanda Ball and Professor Markus Milne, who can be contacted at [amanda.ball@canterbury.ac.nz, Phone: 64-3-364-2614; and markus.milne@canterbury.ac.nz, Phone: +64 3 364 2624. They will be pleased to discuss any concerns you may have about participation in the project.

Thank you for your consideration.

Kind regards,

S. Jeff Birchall
PhD Candidate, Marsden Researcher
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University of Canterbury
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Christchurch 8140, New Zealand
jeffrey.birchall@canterbury.ac.nz
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Article 5.6: Participant consent form

# College of Business and Economics

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ORGANIZATIONAL INVOLVEMENT IN CLIMATE CONTROL: THE OUTCOMES AND LESSONS LEARNED FROM THE NOW DISMANTLED COMMUNITIES FOR CLIMATE PROTECTION – NZ PROGRAMME[449]

CONSENT FORM FOR PARTICIPANTS

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:

1. My participation in the project is entirely voluntary;
2. I am free to withdraw from the project at any time without disadvantage;
3. At the end of the research any raw data (with the code names of the research participants only) on which the results of the research or related publications depend, as required by the University's research policy, will be retained in secure storage for five years, after which it will be destroyed. Once data matching has occurred, the list matching the participants name with the research code name will be destroyed by the researcher or project supervisors;
4. I may decline to answer any questions if I so wish, without any disadvantage to myself of any kind;
5. The precise nature of the questions to be asked in the interview have not been determined in advance, but will depend on the way in which the interview develops. Consequently, although the Ethics Committee is aware of the general areas to be explored in the interview, the Committee has not been able to review the precise questions to be used;
6. If the line of questioning develops in such a way that I feel hesitant or uncomfortable, I may decline to answer any particular question(s) and I may withdraw from the interview, without any disadvantage to myself of any kind;
7. I may withdraw from the process at any time without any disadvantage to myself of any kind. If I terminate the research process before its conclusion, or am unable to continue, then the tape and transcript, will be destroyed at my request;
8. No remuneration is offered for my participation in this project;
9. The results of the research may be published but my anonymity will be preserved.

I agree to take part in this project.

……..
(Printed name of participant)

…….. ……
(Signature of participant) (Date)

This project has been reviewed and approved by the Ethics Committee of the University of Canterbury.

[449] While this represents the consent form provided to the CCP-NZ programme participants, the consent form provided to the CNPS programme participants was the same, save reference to the respective programme.

Article 5.7: Researcher security and confidentiality form

# College of Business and Economics

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ORGANIZATIONAL INVOLVEMENT IN CLIMATE CONTROL: THE OUTCOMES AND LESSONS LEARNED FROM THE NOW DISMANTLED COMMUNITIES FOR CLIMATE PROTECTION – NZ PROGRAMME[450]

AGREEMENT OF SECURITY AND CONFIDENTIALITY BY RESEARCHER

I agree to keep all personal information confidential and secure;

I agree to keep the list that matches participants' identities with their research identification code confidential and secure in a locked cabinet in the department administrator's cabinet;

I agree to destroy the list that matches participants' identities with their research identification code once data matching has occurred;

I agree to keep the identity of interviewees, and the contents of the tapes and transcripts confidential; and,

I agree to destroy the tapes once they have been transcribed.

……
(Printed name of the researcher)

…… …….....
(Signature of researcher) (Date)

NOTE: The project has been reviewed and approved by the University of Canterbury Human Ethics Committee.

[450] While this represents the researchers' agreement of security and confidentiality for the interviews with participants from the CCP-NZ programme, the same form was used for participants of the CNPS programme, save reference to the respective programme.

Article 5.8: Semi-structured interview questions (CS1)

# College of Business and Economics

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UNIVERSITY OF CANTERBURY
*Te Whare Wānanga o Waitaha*
CHRISTCHURCH NEW ZEALAND

**ORGANIZATIONAL INVOLVEMENT IN CLIMATE CONTROL:
THE OUTCOMES AND LESSONS LEARNED FROM THE NOW DISMANTLED COMMUNITIES FOR CLIMATE PROTECTION - NZ PROGRAMME**

## SEMI-STRUCTURED INTERVIEW QUESTIONS

NOTE: The project has been reviewed and approved by the University of Canterbury Human Ethics Committee.

Please state your name, title, and describe your role in the CCP-NZ programme… (identity will be coded prior to interview transcription; participants will be identified strictly by their Ministry/Department/Council)

1. Discuss the value, in general, to a public sector organization participating in the CCP-NZ programme.

2. Ultimately, why did your council become a member of the CCP-NZ programme?

3. What does carbon management and carbon neutrality mean for your council?
    a. Was/is your council striving for carbon neutrality?

4. In joining the CCP-NZ programme, was your council aiming to be a leader, and if so, how was this role benchmarked against other public sector organizations (national/ international)?

<u>Application</u>

1. Discuss the resources you were provided to complete the programme's milestones.
    a. How was it decided who would manage the inventory and action plan?
    b. To what extent did staff get involved?
    c. What kind of climate change awareness programs were available to staff?
    d. How was the CCP-NZ programme received by staff? Was there an opportunity for staff feedback?

2. What milestone did your council reach before the programme was cancelled?

3. What were the barriers to achieving the next milestone?

4. How did you determine your council's action plan?
    a. How did anomalies in your inventory play into the action plan?

5. In working through your inventory and action plan, how were you supported by inter-council sharing of best practices?
    a. Did you have any joint/inter-council emissions reduction programs? Activities? Competitions?
    b. Did you liaise with private organizations?

6. How was the CCP-NZ programme linked to other environmental (air quality, watersheds)/ ecological (habitat, diversification)/ sustainable development (land-use change) initiatives?

Termination Process

1. Why was the CCP-NZ programme dismantled?
    a. How was this received by your staff/council?

2. How was the effectiveness of the CCP-NZ programme evaluated before it was terminated?
    a. Were stakeholders consulted?

3. Discuss your thoughts as to whether or not the CCP-NZ programme had strong collaborative leadership?

Outcomes

1. What have been the co-benefits of participating in the CCP-NZ programme?

2. How did completing the emissions inventory and action plan redefine management practices?
    a. How has the CCP-NZ programme affected cost? Has your department built a carbon cost into its operating budget?

3. How will you measure the performance of your council's emission reduction activities?
    a. How will you determine the success of a given initiative?

4. Was the CCP-NZ programme a success?

Moving Forward

1. How has the momentum for the underlying values of the CCP-NZ programme changed in your council since the programme was cancelled?

2. How will you seek to reduce your emissions in the future?
    a. What have you learned about how your core business impacts the environment?
    b. How has staff behaviour changed?
    c. What lessons have been learned from the CCP-NZ programme itself, i.e. in terms of methodology and organization?

3. How will the status of your current emission reduction activities be affected by the dismantling of the CCP-NZ programme?
    a. Will your emission reduction activities also be discontinued? If so, how will you decide which activities to discontinue?

4. What is your department's long-term goal with regards to emissions reductions?

5. What do you see as the next iteration of the CCP-NZ programme, and will your council take part?

Opinion/Thoughts

1. Discuss your thoughts on carbon offsets as a means to achieve carbon neutrality.
    a. Was carbon offsetting a component of your council's action plan?
    b. What kind of signal does a weighted ratio of offset to mitigation activities give the public, industry? … business a little less than usual?
    c. In your option, are councils doing all they can to maximise their emission reductions via mitigation activities?

2. What is the responsibility of NZ public sector with regards to reducing national and global emissions?
    a. Does the responsibility for curbing public sector emissions lie outside the scope of public administration? Why?

3. With regards to public sector awareness and action against climate change, discuss your thoughts on whether or not a paradigm shift has occurred.

4. What sort of public communication has your council had with regards to its emission reductions activities?

   a. How do you think the public will perceive your council's, and the government's new direction?

5. Discuss your thought on whether or not the transition to a low carbon society/economy depends more on an effective decision making mechanism or the willingness and acceptance of the public for change?

6. What does New Zealand have to do in order "to be truly sustainable – across the four pillars of the economy, the society, the environment, and nationhood" (Clark, 2007c)?

7. Discuss what you think our role is within the environment?
   a. Are we too late to reverse climate change?
   b. Should we focus our efforts on adapting to a new climate or mitigating against the change?

Article 5.9: Semi-structured interview questions (CS2 S1)

## College of Business and Economics

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**5.** Discuss your thought on whether or not the transition to a low carbon society/economy depends more on an effective decision making mechanism or the willingness and acceptance of the public for change?

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**7.** Discuss what you think our role is within the environment?
   a. Are we too late to reverse climate change?
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Article 5.10: Semi-structured interview questions (CS2 S2)

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**ORGANIZATIONAL INVOLVEMENT IN CLIMATE CONTROL:
CARBON MANAGEMENT/ NEUTRALITY WORK (IF ANY) CONTINUED WITHIN NEW ZEALAND COUNCILS SINCE THE DISCONTINUATION OF THE CCP – NZ PROGRAMME**

SEMI-STRUCTURED INTERVIEW QUESTIONS

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General

1. What made your council decide to join CCP-NZ when it did?? Why not sooner?
    a. Did your council go to ICLEI or did ICLEI approach your council to join?
    b. Was there a particular individual within your council that championed the programme?

2. With regard to climate change and carbon management would you say that, within your council, buy-in exist at all levels?
    - Politicians
    - Executive management
    - Management
    - General staff
    - Community

3. Did your council have strong senior management support for CCP-NZ?
    a. Does that support matter?

4. Was climate change thinking part of council policy before it joined the CCP-NZ programme?

5. How does carbon management factor into your council's Annual Report? LTCCP?
    a. How does carbon management link with existing financial or energy policy?

6. When your council joined the CCP-NZ programme, was it aiming to manage its carbon or go carbon neutral?

Costs and Emissions

1. Would your council have joined the programme if the MFE had NOT provided the initial funding?

2. For your council, have the benefits resulting from the programme out-weighted the costs?

3. What have been some of the major costs associated with your councils' participation in the programme?

4. Had the programme continued, would your council have paid the membership fee?

5. Did your council experience emission reductions as a result of activities stemming from its membership in CCP-NZ?
    a. How did/do you measure this?

CCP-NZ Methodology

1. What lessons have been learned from the CCP-NZ programme itself, i.e. in terms of methodology?

2. Do you think that the programme's methodology was sufficiently rigorous?

3. Was the CCP-NZ programme effective for your council?
    a. Did the programme's framework apply to your council? – CCP-Aus.

4. How engaged was ICLIE throughout your council's CCP-NZ experience?

5. In terms of programme delivery, what role did MFE's play? LGNZ? ICLEI?

Moving Forward

1. Is your council currently seeking to:
    a. Manage its carbon emissions?
    b. Reduce its carbon emissions?
    c. Go carbon neutral?

2. What is your council's current carbon emission reduction target?
    a. How does this differ from when your council was part of CCP-NZ?

3. Since the dismantling of the CCP-NZ programme, has your council joined another carbon management programme?
    a. Which one?
    b. What is the cost?
    c. What does it involve?

Opinion/ Thought

1. What was the greatest influence CCP-NZ had on your council?

2. How would you sum up your councils' experience with the CCP-NZ programme?

# Organizational Involvement in Carbon Mitigation: The New Zealand Public Sector

Stephen Jeffrey Birchall

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April 2013